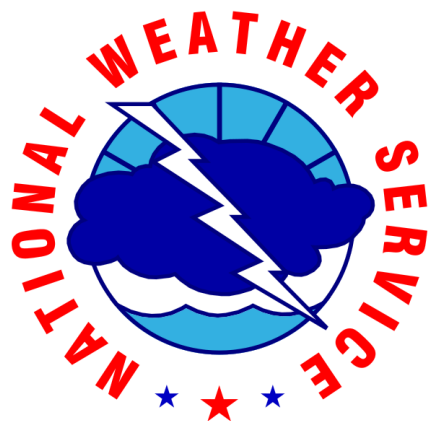


The Climate of Bishop, California



Chris Stachelski
National Weather Service
Las Vegas, NV



The Climate of Bishop, California is a publication produced by the staff at the National Weather Service Office in Las Vegas, Nevada. All data in this publication was obtained from the official forms, publications, digital datasets and record books for this station. All normals, unless noted, were produced by NOAA's National Centers for Environmental Information (NCEI). NCEI's Asheville, North Carolina office should be contacted for certified weather data.

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An Overview of Bishop's Geography and Climate

Bishop is located in southeast California in Inyo County on the floor of the Owens Valley. The Owens Valley is orientated north-northwest to the south-southeast. At the point Bishop is located at, the Owens Valley is 12 miles wide, level, and semi-arid and at an elevation of roughly 4,100 to 4,200 feet above sea level. Peaks of the 12,000 to 14,500 foot Sierra Nevada are 25 miles to the west, and the 12,000 to 14,000 foot White Mountains are 10 miles to the east. The northern end of the valley is partly cut off by 6,000 to 8,000 foot mountains that are about 45 miles distant. The southern end of the valley makes a gradual descent to the Mojave Desert about 150 miles away. The present official climate station for Bishop is located at the Eastern Sierra Regional Airport about two and a half miles east of the town and about 1 mile west of the Owens River.

The dramatic drop in elevation, primarily from the Sierra Nevada to the valley floor, largely drives the weather experienced in the Owens Valley. The Sierra Nevada largely serves as a barrier to moisture moving in from the Pacific creating a "rain shadow" effect on the valley. Thus, many storms that move in from the Pacific are marked by just clouds and no precipitation. The precipitation that does fall from the passage of cold fronts and other winter disturbances is usually light, although periods of heavier intensity do occur usually with atmospheric river type events. Most of the precipitation to fall at Bishop occurs between November and April. Winters with heavier precipitation often will see dry lakes and creeks fill with water. Snow typically occurs several times each winter on the Owens Valley floor; however, amounts from a single storm exceeding a foot are unusual.

Gusty winds occur in every month of the year. From the fall through the spring, when strong westerly winds aloft flow over the Sierra Nevada ahead of incoming storm systems they often result in wind being forced down the eastern slopes of the Sierra generating powerful westerly wind gusts. These gusts are most noted on the western side of the valley, with the occurrence often less at the Bishop climate station. At times, strong northerly winds blow, especially behind the passage of cold fronts during the months of February, March and April. East and west winds frequently give pronounced foehn effects and turbulence. During the summer and autumn, the heating difference between the Owens Valley and Mojave Desert causes an early morning and late evening northerly wind as air flows from higher pressure over the Owens Valley towards lower pressure over the Mojave Desert. Conversely, in the heat of the afternoon, it causes a southerly wind that is occasionally strong. Bishop often records very large diurnal swings in temperature. Differences of over 50 degrees between the daytime high and the nighttime low have been observed. The hottest summer days at Bishop feature highs in the triple digits. In the winter, the coldest mornings feature low temperatures in the teens. Being in the lee of the Sierra, Bishop is not as protected from colder air seeping out of the Great Basin as areas just to the west of the Sierra, and as a result at least every other winter low temperatures drop

into the single digits. Low temperatures below zero occur with the most extreme cold outbreaks.

In the summer months, occasional pushes of moisture into the region from the south result in thunderstorms developing over the Sierra Nevada and White Mountains. On days when the flow in the atmosphere can push these storms into the Owens Valley they bring gusty winds and sometimes rain. Otherwise the warmer season months feature abundant sunshine.

History of Weather Observations

Weather observations were originally taken in Bishop by several cooperative observers from November 1, 1883 through August 31, 1918. Outside of physical street addresses and the names of the observers, very little documentation exists on the type of weather equipment and the siting of it. In addition, several gaps exist in the records in between observers, sometimes over a period of several months. Given this as well as the desire to have a climate record that uses a continuous period of record, the earliest recorded weather observations in Bishop were not used in records in this report or in any datasets contained within it.

After years with no formal record of weather observations, the United States Army requested a Weather Bureau station be established in Bishop. The original station was located at a private residence at 525 Howard Street and commenced a record of observations starting on June 17, 1943. Equipment consisted of maximum and minimum thermometers and a psychrometer located 4 feet above the ground, an eight rain gauge and a barometer. Wind instruments were located 44 feet above the ground. The station was located at this location until March 28, 1944 when it moved two and half miles east to the Base Option Building (Figure 1) at Air Base Bishop (now Eastern Sierra Regional Airport). Observations then consisted of hourly aviation weather reports with additional 3 and 6 hourly data. A reduction in staffing forced the closure of the station on October 18, 1945. As a result, equipment was moved 3.1 miles west to the Ray residence which was located one and a half miles west of the post office. The Ray residence remained the official observing and climate location for Bishop through May 4, 1946.



Figure 1- Bishop weather station located at the Air Base Operations Building at the Bishop Airport on December 3, 1944. The numbers on the photo correspond to: 1. 12 foot combined wind support 2. Entrance to Weather Office 3. Instrument shelter and rain gauge 4. Ceiling light switch. Photo courtesy of NCEI.

On May 4, 1946 the station made another move to 150 Johnson Drive (Figure 2). This location was two miles east of the Ray residence and a half of a mile east of the Post Office. Observations remained at 150 Johnson Drive until March 9, 1947 when an office was re-established at the Base Option Building (Figures 3-5) at Air Base Bishop (later Bishop Airport). On June 18, 1947, pilot balloon observations were started. Four pilot balloon observations were taken each day. The Bishop Weather Bureau office conducted twenty four hour a day operations until January 15, 1949 when office hours were cut to 0700-2230 PST. The 0900Z pilot balloon observation was also eliminated on this date due to the change in office hours. In order to keep a continuous record of temperature and pressure, this data was collected by a thermograph and barograph. On October 25, 1950, hours were trimmed again at the Bishop office, with operations running from 0645 through 1945 PST. The 0300Z pilot balloon was also discontinued and double-theodolite observations commenced for the 2100Z pilot balloon observation. On January 6, 1954, a universal weighing rain gauge was installed at Bishop.



Figure 2 – The Bishop weather station at 150 Johnson Drive on May 20, 1946.

The numbers in the photo represent the following: 1. 8" rain gauge
2. Instrument shelter 3. Wind Instruments 4. Building used for Office.

Photo courtesy of NCEI.



Figure 3- The Bishop office at the Base Operations Building at the Bishop Air Base (later Bishop Airport) on March 10, 1947. The numbers in the photo correspond to: 1. Instrument shelter 2. 8" rain gauge 3 and 4. wind instruments 5. Ceiling light switch 6. Area of building where the weather office was located at. Photo courtesy NCEI.



Figure 4 – The Bishop office on January 20, 1949 at the Bishop Airport. The numbers in the photo correspond to: 1. Office 2. Instrument Shelter 3. Pibal Windbreak. Photo courtesy NCEI.



Figure 5- The Bishop office on June 17, 1974. In the front of the photo a rain gauge and instrument shelter can be noted. Photo courtesy NCEI.

On May 22, 1979, the Bishop office made its final move at the Bishop Airport to the northwest side of the Airport Administration Building at 690 Airport Road. This was 360 feet to the west-southwest of the Base Operations Building. On May 1, 1995 as part of the National Weather Service Modernization and Restructuring, an Automated Surface Observing System or ASOS was commissioned at the Bishop Airport as the official equipment for taking weather observations and was located centerfield (Figures 6 and 7). At the time the ASOS at the Bishop Airport had been installed, the office only had a staff of one person and thus did not have a full twenty four weather watch despite being a First Order Climate Station. The ASOS installed would allow for twenty four hour a day weather observations to be reported here for the first time since the late 1940s. The Bishop office was spun down in late 1995 into early 1996 with responsibility for maintain the climate records for Bishop transferred to the National Weather Service Office in Las Vegas, Nevada. After the commissioning of ASOS, weighing rain gauge charts were changed by staff from the United States Forest Service until February 23, 1996 when manual weather equipment was removed. However, since ASOS is a fully automated system, a need for a back-up weather records exists in the event of any equipment or communications issues with the ASOS as well as to report snow measurements. The initial responsibilities were at a Fire Station located at the Bishop Airport from November 21, 1996 through August 25, 2005. Since then back-up observations have come from reliable spotters and automated precipitation rain gauges located in Bishop. Effective November 2009, a CoCoRaHS observer residing six tenths of a mile southeast of the center of Bishop, site CA-IN-1, has been used for back-up precipitation reports given their location close to that of the Eastern Sierra Regional Airport. As of November 2,

2015, this location was changed to a CoCoRaHS observer located 1.7 mile northwest of the center of Bishop, site CA-IN-4.



Figure 6 (top) and Figure 7 (bottom) showing the Eastern Sierra Regional Airport in the area where the Bishop ASOS is located at and a close-up of the ASOS. The ASOS is roughly near the center of the top photo.

Photos taken on June 30, 2011 by Chris Stachelski.

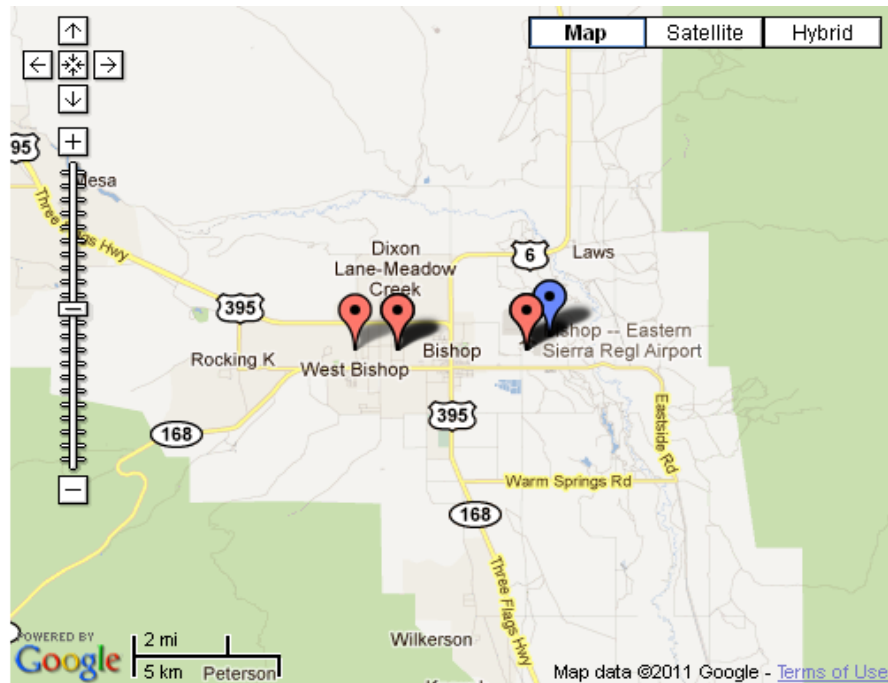


Figure 8 (top) – Map showing the location of the Bishop weather station. The far left red marking is the location of the Ray Residence while the red marking second from the left shows the location of 150 Johnson Drive. The two markers on the right show the location of the weather station at the Bishop Airport with the red marker the location of the Airport Administration Building and the blue circle the ASOS. Figure 9 (below) shows a close up of the weather station locations at the Eastern Sierra Regional Airport.

Temperature Record

Daily records of temperature in Bishop started on September 1, 1943. All temperature data is given in degrees Fahrenheit. An overview of each month's temperatures is listed below, followed by normal and record extremes for each day and month. Normals are from 1981-2010 and provided by NOAA's National Centers for Environmental Information (NCEI).

Month	Normal Average Maximum Temperature	Normal Average Minimum Temperature	Normal Average Temperature
January	54.0	23.0	38.5
February	57.9	26.5	42.2
March	65.5	31.2	48.3
April	72.7	36.3	54.5
May	82.4	44.2	63.3
June	92.0	51.0	71.5
July	98.4	56.2	77.3
August	96.3	53.8	75.0
September	88.2	47.0	67.6
October	76.1	37.4	56.8
November	62.6	27.8	45.2
December	53.3	22.1	37.7
Annual	75.0	38.1	56.6
All normals are based on the period from 1981 – 2010.			

Month	Record Highest Maximum	Record Lowest Maximum	Record Highest Minimum	Record Lowest Minimum
January	77 on 1/24/1948	19 on 1/22/1962*	45 on 1/2/1997*	-7 on 1/7/1982*
February	81 on 2/13/2014*	28 on 2/5/1989	51 on 2/21/1945	-2 on 2/8/1969*
March	87 on 3/31/1966	34 on 3/15/1952	53 on 3/9/1989	9 on 3/1/2007*
April	93 on 4/8/1989*	39 on 4/21/1967	58 on 4/8/1977*	15 on 4/9/1953
May	102 on 5/28/2003	45 on 5/6/1964	63 on 5/24/2000	25 on 5/22/2010*
June	109 on 6/30/2013*	59 on 6/7/1995	71 on 6/23/1954	25 on 6/2/2011
July	110 on 7/10/2002	69 on 7/31/1976	72 on 7/7/2014*	34 on 7/18/1987
August	107 on 8/2/1993*	71 on 8/21/1968	75 on 8/4/1961	34 on 8/22/1947
September	106 on 9/2/1950	50 on 9/29/1982	67 on 9/3/2003	26 on 9/26/1986*
October	97 on 10/1/1980	38 on 10/28/1971	59 on 10/12/1962	16 on 10/28/1970
November	84 on 11/3/1988	34 on 11/11/1946	51 on 11/4/1944	5 on 11/17/1958
December	78 on 12/3/1958	21 on 12/14/1967	49 on 12/23/1964	-8 on 12/22/1990*
Annual	110 on 7/10/2002	19 on 1/22/1962	75 on 8/4/1961	-8 on 12/22/1990*
Daily records started on September 1, 1943.				
*Date listed above is most recent occurrence.				

January

Period of Record: 1944-Present

Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	53	22	70/1959	29/1952	45/1997	8/1976*
2	53	22	67/1999*	29/1974	45/1997	-4/1955
3	53	22	69/1984	26/1949	34/2002*	-3/1974
4	53	22	68/1984	25/1974	34/1969	-2/1955
5	53	22	73/1984	34/1993*	32/2003*	1/1955
6	53	22	71/1984*	30/1982	37/1965	4/1982
7	53	22	73/1962	32/1982	33/1962	-7/1982
8	53	22	72/1945	37/1950	39/1962	2/1982
9	54	22	67/1990*	25/1974*	38/1962	3/1955
10	54	23	75/2014	22/1949	43/1995	-7/1974
11	54	23	71/2014*	19/1949	41/1959	-3/1974
12	54	23	76/1998	28/1949	37/1981*	2/1993
13	54	23	72/1998	31/1997	43/1969	2/1963
14	54	23	73/2009	31/1974	37/1978	1/2007
15	54	23	71/2014*	30/1987	32/1979*	6/1949
16	54	23	74/1976	30/1949	35/1996*	6/1993
17	54	23	76/2011	33/1988	39/2011*	2/1949
18	54	23	76/1971	35/1955	37/1971	6/1949
19	54	23	72/1971	35/1949	35/1983*	1/1955
20	54	23	74/1971	32/1982	35/1999	-6/1955
21	54	23	70/1968	29/1962	38/1967	-3/1955
22	54	23	73/1950*	19/1962	36/1981*	5/1982
23	55	24	75/1953	37/1962	38/1948	0/1964
24	55	24	77/1948	30/1949	44/2013	8/1964*
25	55	24	76/2015	35/1999*	43/2005	0/1949
26	55	24	73/2015	33/1957	43/2005	4/1949
27	55	24	72/1971	30/1957	44/2015	9/1979
28	55	24	72/1976	34/1957	34/2014	4/1957
29	55	24	73/1971	34/2002*	35/2013*	4/1949
30	55	24	74/1971	33/1979	40/2015	2/1969
31	55	24	72/1971*	32/1979	40/1963	4/1969

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

February

Period of Record: 1944-Present

Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	55	24	73/2003*	36/1949	38/1963	9/1969*
2	55	25	72/1995	38/1955	40/1945	9/1969*
3	56	25	74/2001	35/1955	42/1944	7/1969
4	56	25	74/1962	38/2008*	41/1996	6/1948
5	56	25	74/2001*	28/1989	41/1978	9/1985
6	56	25	80/2015	29/1989	42/2011	7/1989
7	56	25	72/1954*	33/1989	39/1992	-2/1969
8	56	25	76/1954	35/1989	39/1992	-2/1969
9	57	26	75/2014	35/1989	42/2015*	6/1969
10	57	26	78/1951	36/1982	43/1962	9/1969
11	57	26	75/1971	34/2001	43/1970	12/1948
12	57	26	74/1971	34/2001	38/1992*	8/1948
13	57	26	81/2014	32/1949	39/1975	12/1948
14	58	26	80/2014	32/1990	39/1977	7/1949
15	58	27	76/2015*	37/2001	41/1962	9/1990
16	58	27	80/2015	35/1956	42/1991	10/2006
17	58	27	77/1977	43/1990	39/1981*	12/1969*
18	59	27	75/1981*	36/1955	42/1986	15/1944
19	59	27	77/1995	37/1962	40/1996	12/1956
20	59	27	77/1982	36/1944	41/2000	15/1951
21	59	28	75/1948	36/1944	51/1945	16/1987
22	60	28	75/2012	36/1944	45/1968	14/1953
23	60	28	74/1995*	35/1987*	40/2009	14/1951*
24	60	28	76/1989*	38/1969	44/1981	10/1944
25	61	28	79/1986	40/1987	42/1972	13/1956*
26	61	29	80/1986	36/1962	41/1960	17/1969*
27	61	29	81/1986	36/1996	46/1988	8/1971
28	61	29	78/1986	34/1969	46/1988	11/1951
29	62	29	71/2008*	44/1996	42/1988	21/1996

* Also in previous years.

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March

Period of Record: 1944-Present
Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	62	29	78/1986	37/1971	43/1982	9/2007*
2	62	29	76/1972*	42/1981*	43/2009	9/1971
3	62	29	80/1972	39/1969	51/1972	14/2002*
4	63	30	78/1972	40/1969	40/1972	12/1966
5	63	30	81/1972	46/2000	46/1987	12/1948
6	63	30	85/1972	39/1969	43/1987	14/1971
7	63	30	82/1972	36/1952	40/2011*	16/1956
8	64	30	81/1972	39/1952	44/1989	11/1969
9	64	30	83/1972	38/1962	53/1989	13/1969
10	64	31	79/1972	41/1969	45/2004	14/2009
11	64	31	80/2007*	40/1954	43/2015	13/1969*
12	65	31	83/2007	43/1990	40/1967*	16/1969
13	65	31	85/2007	39/1969	44/2005	14/2006
14	65	31	84/2007	39/1952	43/1972	17/2009
15	65	31	82/2007	34/1952	46/2004	12/2002
16	66	31	84/2007	43/1952	42/1976*	15/2002
17	66	31	84/2007	35/1982	46/2015	16/1955
18	66	32	82/2007	45/1991	49/2015	15/1954
19	66	32	82/2004	48/1987	48/2013*	15/1970
20	67	32	84/2004	40/1991	46/2013	15/1987
21	67	32	84/2004	42/1952	47/1978	20/1999
22	67	32	83/2004	46/1952	46/1963	20/1948
23	67	32	82/2004	46/2011	45/2012	18/1964
24	67	32	81/1960	47/1995*	48/2012	16/1964
25	68	32	82/1960	39/1994	45/1971	17/1980
26	68	33	81/2015*	44/1975	45/2008*	17/1948
27	68	33	85/2015	41/1975	47/2001	23/1964
28	68	33	85/2015	43/1975	47/2001	15/1972
29	68	33	84/2015	46/1998	50/2001	19/1998
30	69	33	85/2015	44/1977	49/2011	17/1949
31	69	33	87/1966	48/1999	50/2013	21/2009

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

April

Period of Record: 1944-Present
Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	69	33	90/1966	39/1998	49/1989*	18/2010*
2	69	34	89/1961	47/1981*	52/1989	19/1975
3	70	34	92/1961	41/1958	50/1950	20/1956
4	70	34	86/1960	49/1955	47/1985	20/2010
5	70	34	86/1989*	50/2010	47/2007*	19/2009
6	70	34	90/1989	44/1958	50/2007	20/2012
7	70	34	93/1989	45/1978	50/1960	17/1982
8	71	35	93/1989	44/2011	58/1977	21/1975
9	71	35	92/1989	42/2001	52/1962	15/1953
10	71	35	91/1989	49/1953	48/1951	18/1999
11	71	35	84/1985	49/1991	55/1989	23/1953
12	72	35	85/1985	40/1956	51/2014	22/1953
13	72	36	87/2013*	42/1956	50/2014	22/1993
14	72	36	89/2002	52/1998	52/1954	24/1983
15	72	36	87/1989*	51/2009	48/1948	25/1970
16	73	36	89/1987	46/1976	49/1964	21/1967
17	73	36	90/1989*	50/1968	50/1994	23/1976
18	73	37	91/1989	50/1955	58/1961	22/2002
19	74	37	89/1989	50/1967	52/1949	19/2007
20	74	37	91/1950	53/1967	50/1999*	22/1967*
21	74	38	92/1950	39/1967	55/1997	20/2008
22	74	38	91/2012	52/1980	51/2013	22/1963
23	75	38	90/2012	53/1964	54/1953	25/1968*
24	75	38	87/1996*	53/1971	54/1956	27/1964
25	75	39	87/1996*	49/1984	53/1949	24/1989
26	76	39	90/2000*	53/1984*	52/1981	21/1984
27	76	39	90/1949	50/1970	50/2006*	23/1955
28	76	40	92/2013	51/1970	54/2006	26/1955
29	77	40	91/2013	52/1999	52/2013	27/1984
30	77	40	93/1981	56/1967	55/1992	25/2002

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

May

Period of Record: 1944-Present
Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	77	40	94/1981	48/1955	53/2012*	28/2002
2	78	41	96/1947	58/1964	56/1984	28/1951
3	78	41	94/1947	55/1950	54/1951	25/1964
4	78	41	93/1947	46/1964	55/1966	29/1965
5	79	42	100/1946	55/1964	56/1966	28/1983*
6	79	42	98/1946	45/1964	56/1966	29/1988
7	80	42	92/2009*	54/1977*	56/2000	27/1965
8	80	42	93/1974	50/2015*	55/1992	28/1988
9	80	43	93/1960	54/1977	58/2014	30/2003*
10	81	43	96/1960	58/1983	60/1961	25/2010
11	81	43	96/1960	59/1982	61/1993	29/1986
12	81	43	95/1996	55/1977	60/1993	27/2000
13	82	44	94/2013*	57/1998	55/1993*	32/2010
14	82	44	94/1984	57/1998	55/1993	32/2010
15	82	44	92/2014*	51/1953	57/2008	28/1955
16	83	44	96/2014	56/1977*	56/2013*	31/2011
17	83	45	97/2009*	57/1977	56/2006	27/1998
18	83	45	100/1954	53/1948	57/1996	29/1977
19	83	45	99/2008	58/1974	59/2009*	32/1945
20	84	45	96/1984	60/1987*	54/1973	31/1974
21	84	46	95/2012*	61/1975	60/2001	34/2002
22	84	46	99/1984	63/2008	56/1999	25/2010
23	85	46	98/2001*	61/2010	60/2012	33/1959
24	85	46	97/2001	60/1980	63/2000	28/2010
25	85	46	100/1951	60/2008	59/1993	26/1980
26	86	47	101/1951	57/1962	56/1992	33/1980
27	86	47	100/2003	51/1962	60/2001*	27/1998
28	86	47	102/2003	56/1953	60/2001	33/2006
29	87	47	99/2003	58/2011	60/1966	34/2008
30	87	47	100/1986	56/1945	60/2001*	30/2011
31	87	48	99/1950	62/1967	60/2013*	33/1971

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

June

Period of Record: 1944-Present
Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	88	48	98/2012*	62/1961	63/2010*	29/1967
2	88	48	100/2003	70/1965*	62/1981	25/2011
3	88	48	100/1960	62/1998	61/2013	31/2011
4	88	48	100/1996*	70/1999	62/1997	36/2009
5	89	49	101/2004	66/1993	63/2003	35/1980
6	89	49	102/2010*	63/1993*	61/1977	32/1988
7	89	49	103/2013	59/1995	58/2004	29/1988
8	90	49	105/2013	72/1995	64/2014	35/1988
9	90	50	104/2013	65/1954	61/2010	37/1995*
10	90	50	102/1949	63/1963	65/1985	32/1954
11	91	50	102/1949	69/1963	62/1973	36/1976
12	91	50	102/1974	61/1998	63/2015	35/1952
13	91	50	102/1985*	64/1997	67/2000	40/1980*
14	92	51	102/1989*	62/1962	63/1985	40/2001*
15	92	51	107/2000	60/1944	62/2000*	37/1992
16	92	51	104/1961	60/1995	68/1974	28/1944
17	93	51	104/1985	69/1979	65/2002	39/1944
18	93	52	107/1985	73/1975	65/2002	39/2005*
19	93	52	107/2015	75/1975*	67/2002	36/1995
20	94	52	108/2015	76/1975	62/1961	39/1991
21	94	52	108/1961	68/1944	64/1961	40/1995
22	94	53	109/1954	80/1944	66/1961	40/1944
23	94	53	104/1961*	73/1963	71/1954	43/2005*
24	95	53	105/1961*	77/1975	65/1968	42/1944
25	95	53	107/2006	80/2005	65/1988	41/1975
26	95	53	104/1973*	73/1996	65/2006	42/1998*
27	96	54	106/2015	76/1991	68/1977	41/1996
28	96	54	107/2013	77/1991	66/2015	43/1989
29	96	54	108/2013	78/1982	65/2015	42/1963
30	96	54	109/2013	67/1982	64/2015	41/1997

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

July

Period of Record: 1944-Present
Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	97	55	109/2013	81/1982	68/2015	42/1982
2	97	55	105/2014*	86/1949	72/2013	44/1978*
3	97	55	107/1984	81/1961	71/2013	42/1947
4	97	55	107/2007*	86/1982	67/2001	42/1955
5	97	55	108/2007	86/1982	67/1984	42/1948
6	98	56	105/1989*	74/2001	67/1985	40/1955
7	98	56	106/1989	77/2001	72/2014	44/2000
8	98	56	106/2008	85/1945	70/1991	44/2004
9	98	56	107/2002	77/1970	72/1975	45/1947
10	98	56	<u>110/2002</u>	82/1999	71/1985	43/1947
11	98	56	106/2012*	87/2013*	70/2013*	44/1974
12	99	56	106/2003	72/1962	69/1990	45/1981
13	99	56	107/2014	86/1969	68/2002	47/1966*
14	99	57	108/1972	89/2011	66/2014*	45/1956
15	99	57	109/1972	84/1967	70/2014	47/1993
16	99	57	109/1972	76/1976	70/2013	46/1983*
17	99	57	107/2006*	77/1987	67/1954	42/1983
18	99	57	108/2005	77/1987	70/2006	34/1987
19	99	57	108/2005	79/1987	67/2003	47/2000*
20	99	57	107/2013*	76/1979	67/1961	40/1983
21	99	57	106/1981	83/1987	69/2008	44/1999
22	99	57	109/2003	73/1986	67/2013	39/1987
23	99	57	105/1980*	75/1997	72/2003	44/1947
24	99	57	106/2010*	86/1946	72/2003	46/1987*
25	99	57	107/1980*	86/1946	70/2013	46/1995
26	99	57	108/1975*	89/1986*	65/1975	46/1947
27	99	57	106/2006*	81/1964	70/1951	42/1947
28	99	57	105/1994	85/1997	71/2004	48/1965
29	99	57	104/2007*	87/1952	67/2006	47/1986
30	99	56	105/1977	78/1952	70/1972*	47/1975
31	99	56	109/2000	69/1976	67/2003*	47/1985

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

August

Period of Record: 1944-Present
Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	99	56	107/1977	82/2003	71/2007	44/1985
2	98	56	107/1993	86/1976	67/2007	44/1956
3	98	56	106/1979	80/2014	66/1995	46/2004
4	98	56	105/1987*	82/2014	<u>75/1961</u>	45/1962*
5	98	56	105/1998*	75/1955	68/1971	44/1957*
6	98	56	106/1978*	78/1945	69/1979	43/1991
7	98	55	107/1981	81/1982	71/1983	44/1946
8	98	55	107/1981	86/1989*	68/1994	45/2006*
9	98	55	107/1981	85/1983	63/2005*	43/1950*
10	97	55	105/1971*	85/1999*	68/1969	43/1950
11	97	55	106/1970	79/1961	65/1971*	44/1999
12	97	55	105/1960	82/1979	65/1991	42/1993
13	97	54	106/2002*	80/1968	65/1960	45/1954
14	97	54	106/2002	79/1976	67/2015	41/1999
15	97	54	105/2002*	70/2005	65/1958	40/1954
16	97	54	106/1994	82/1977*	67/1992	41/1976
17	96	54	106/2015	77/1979	65/1992*	46/1972*
18	96	54	105/2001*	77/1983*	67/1970	43/1954
19	96	53	106/1950	78/1983	67/1961	42/1990
20	96	53	105/2015	78/1959	65/1997	37/1959
21	96	53	104/1950	71/1968	64/2003*	41/1968
22	95	53	102/2007*	77/1968	65/1995	34/1947
23	95	53	102/1991	77/1982	65/2011	40/1947
24	95	52	102/2011	82/1989	64/1982	41/1978
25	95	52	103/2010*	86/1954	65/1988	40/1947
26	95	52	102/2001	73/1973	66/1988	42/1954
27	94	52	103/1950	82/1954	67/1970	41/1973
28	94	52	103/2001*	84/1982*	62/1970	40/1991
29	94	51	105/1950	78/2000	64/1992	40/1946
30	94	51	103/1998*	79/2000	62/2012*	40/2010
31	93	51	103/1976*	76/1953	63/2013	40/1946

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

September

Period of Record: 1943-Present

Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	93	51	104/1950	71/1954	60/1996	39/1999
2	93	51	106/1950	74/1961	65/2013	36/2000
3	93	50	103/1955	75/2004	67/2003	39/1994
4	92	50	103/1955	73/1985	64/2014	41/2004
5	92	50	103/1955	63/1978	61/1984	38/1985
6	92	50	103/1955	78/1991	61/1950	40/1964
7	91	49	100/1955	64/1950	61/1982	40/2000*
8	91	49	100/1979*	80/2002*	60/2014	39/1964
9	91	49	101/1993	76/1980	60/1960	37/1964
10	90	49	100/1993*	66/1952	60/1976*	37/1985*
11	90	48	101/2015*	70/1985	62/1992	32/1952
12	90	48	100/2015*	73/1988	59/1959	33/1985
13	89	48	102/1971	71/1996	65/1971	36/2005*
14	89	48	100/1971	68/1978	60/1971	35/2007
15	89	47	97/2014*	75/1982	61/1971	34/1986
16	88	47	99/2000	69/1982	62/1961	36/1986*
17	88	47	97/2000*	68/1965*	58/1947	36/2006*
18	88	46	97/1962	63/1978	59/2002	30/1946
19	87	46	96/2000*	63/1989	58/2014	33/1946
20	87	46	97/1974*	65/2007	56/1975	29/1986
21	86	46	97/1949*	66/1988	58/1951	31/1986
22	86	45	98/1949	68/2007	53/1999*	29/1945
23	86	45	99/1949	69/1986	52/1992*	32/1986
24	85	45	96/2003	65/1982	56/1982	31/2006
25	85	44	96/2015	66/1986	60/2014	32/1986
26	84	44	96/2010*	64/2013	59/1999	26/1986*
27	84	44	98/2010	62/1982	53/1966	32/1986
28	83	43	99/2010	65/2002	53/1961	31/2013*
29	83	43	99/2010	50/1982	62/1989	31/1971
30	83	43	95/1980	57/1983	55/1957	32/2007*

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

October

Period of Record: 1943-Present

Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	82	42	97/1980	63/2002*	54/2006	30/1971
2	82	42	95/1980	60/2002	57/1992	27/1946
3	81	42	96/1980	62/1969	54/1948	31/1950
4	81	41	95/1987	57/2009	56/2011	29/1969
5	81	41	94/1987*	54/1946	56/1993	22/2009
6	80	41	93/1980*	58/1945	52/1970	26/1957
7	80	40	94/1965	61/1945	57/1943	29/1955
8	79	40	95/1996	50/1949	51/1960	29/2007*
9	79	40	93/2015*	50/1985	55/1958	30/1990
10	79	39	92/1971	51/1960	50/2004	25/1985
11	78	39	91/1971	49/2008	49/1991	27/2008*
12	78	39	93/1954*	54/2008	59/1962	26/2008
13	77	38	90/2015*	54/2009	56/1962	23/1986
14	77	38	91/1991*	53/1981	52/1988	22/1966
15	77	38	90/1991	54/1984	53/2015	23/1966
16	76	37	90/1959	51/1971	54/1963	23/1984
17	76	37	88/1988*	58/1971	54/2010	23/1998*
18	75	37	88/1988	54/1969	50/2015	23/1946
19	75	36	89/1988	48/1949	47/1986	23/1971
20	75	36	86/2003	49/1957	48/2009*	25/1971*
21	74	36	89/2003	53/1953	50/2001*	24/1996
22	74	35	87/2003*	49/1953	46/1982	20/1996
23	73	35	93/1959	54/1975	50/1989	24/1961
24	73	35	90/1959	48/1971	46/1992*	22/1975
25	73	35	92/1959	54/1951	45/1982*	20/1954
26	72	34	88/1959	48/1996	46/1959	18/1997
27	72	34	87/1959	48/1991	47/1977	20/2010
28	71	34	87/2003	38/1971	53/1964	16/1970
29	71	33	85/2003	43/1974	48/2015	19/2013
30	70	33	81/1966*	40/1996	48/1963	17/1971
31	70	33	84/1966*	48/1996	57/2008	18/2003*

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

November

Period of Record: 1943-Present
Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	69	32	84/1960*	47/1974	48/2008*	15/1971
2	69	32	84/1949	47/1957*	43/1950	18/2011
3	69	32	84/1988	45/1994	45/1992	18/1946
4	68	31	83/1988	48/1957	51/1944	14/2003
5	68	31	82/1950	47/1957	42/1967	15/1946
6	67	31	81/1955	49/1960	46/1988	18/1947
7	67	30	82/1958	52/2011*	43/1966	20/2015
8	66	30	80/1980*	47/2004	46/2005*	13/2011
9	66	30	79/1968	43/1982	42/2004*	15/2011
10	65	29	80/1955	44/1982	47/1944	11/2000
11	65	29	79/1956	34/1946	48/1973	10/2000
12	64	29	77/2008	37/1946	40/1968	10/1978
13	64	28	79/2008	40/1946	44/1981*	8/2000
14	63	28	79/1967	40/1964	47/2008	16/1994*
15	63	28	78/1997	39/1952	46/1976	10/2000
16	62	28	77/2008	37/1958	45/1965	11/2000
17	62	27	77/2008	37/1964	45/1965	5/1958
18	61	27	77/1976	38/1994	40/1965	10/1964
19	61	27	77/2005	46/1985*	44/1950	9/1985
20	60	26	77/1962	40/1961	44/1966	10/1985
21	60	26	78/1950	38/1951	44/1950	14/1979
22	59	26	76/1954	38/2013	40/1977	16/1979
23	59	26	78/1959	40/1952*	42/1946	11/1955
24	59	25	80/1949	37/1983	37/1949	12/1955
25	58	25	78/1954	43/1983	40/1975	12/1993
26	58	25	76/1954*	41/1994	43/1958	11/1993
27	57	25	76/1949	42/2001	39/2008	9/1994
28	57	24	78/1949	38/2001	45/1977	11/1994
29	57	24	76/1949	37/2001	36/2008*	11/2004*
30	56	24	72/2008*	39/2001*	46/1977	9/2004

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

December

Period of Record: 1943-Present
Normals: 1981-2010

Date	Normal High	Normal Low	Record High Maximum	Record Low Maximum	Record High Minimum	Record Low Minimum
1	56	24	73/1959	42/2001	39/2002	12/2007
2	56	23	77/1958	38/1985	40/1964	10/2007
3	55	23	78/1958	38/1985*	40/1980	10/1955
4	55	23	77/1958*	36/1985	36/1974	11/1955*
5	55	23	73/1977	36/1947	36/1966	6/1948
6	54	23	74/1962	31/1978	38/1966	5/2013
7	54	23	73/1962	30/1978	35/2007*	8/1998
8	54	23	72/1962	34/2009	36/1949	7/2013
9	54	22	74/1957	29/1972	40/1984	5/2009
10	54	22	72/1958	30/1972	35/1984	6/2013
11	53	22	78/1958	34/1949	32/1996*	8/1971
12	53	22	74/1953	34/1972	44/1956	6/1972*
13	53	22	74/1953	27/1967	38/1948	8/1967
14	53	22	71/2010	21/1967	37/1983	6/1972
15	53	22	72/2006	32/1987	41/1974	7/1948
16	53	22	72/1980	33/1987	38/1957	6/1984
17	53	22	72/1998	34/2008	33/1978	0/1984
18	53	22	72/1999	28/1984	38/2010*	5/1984
19	53	22	69/1985	38/2008*	48/1999	8/1984*
20	53	22	71/1972	32/1990*	42/1981	-2/1967
21	53	22	69/1960	24/1990	37/2004*	-4/1990*
22	53	22	74/2014	32/1998	39/2014	<u>-8/1990</u>
23	53	22	73/1964	34/1987*	49/1964	-5/1990
24	53	22	71/1964	30/1987	45/1964	3/1990
25	53	22	68/1985	36/1988	42/1964	2/1948
26	53	22	68/1985*	30/1988	36/2005*	3/1962
27	53	22	70/1956	26/1988	35/2004	<u>-8/1988</u>
28	53	22	71/1980	31/1988	42/1975	-1/1988
29	53	22	70/1973	35/1987	36/1994*	3/1988
30	53	22	69/1998	36/2010	37/2001	2/1990
31	53	22	68/1998	33/1951	39/1996	5/1990

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

Warmest and Coolest Monthly and Annual Average Temperatures

Listed below are the normal average temperatures by month and then year based on the period from 1981 through 2010 and the ten warmest and ten coldest for each based on average temperature.

January

Normal Average Temperature: 38.5	
Warmest Januaries	Coldest Januaries
1. 44.9/2014	1. 23.8/1949
2. 44.6/2015	2. 27.2/1955
3. 44.4/2003	3. 29.7/1974
4. 43.5/1953	4. 30.4/1952
5. 42.5/2009	5. 30.8/1993
6. 42.4/1984	6. 31.7/1973
7. 42.3/1986	7. 31.9/1982
8. 41.6/2011	8. 32.1/1957
9. 41.5/1971	9. 32.9/1950
10. 41.0/1965	10. 33.2/1960
10. 41.0/1959	

February

Normal Average Temperature: 42.2	
Warmest Februaries	Coldest Februaries
1. 50.3/2015	1. 30.1/1969
2. 48.6/1963	2. 35.8/1949
3. 48.3/1995	3. 36.2/2001
4. 47.3/1968	4. 37.4/1944
5. 46.4/1954	5. 37.7/1994
6. 46.1/2014	6. 37.6/1956
6. 46.1/1977	7. 37.8/1955
8. 45.8/1991	8. 37.9/1993
9. 45.5/1957	9. 38.0/1948
10. 45.3/1970	10. 38.1/1998

March

Normal Average Temperature: 48.3	
Warmest Marches	Coldest Marches
1. 55.0/2015	1. 40.1/1969
1. 55.0/2004	2. 40.6/1952
1. 55.0/1972	3. 41.4/2006
4. 52.9/2013	4. 41.6/1948
5. 52.2/2007	5. 41.9/1991
6. 51.6/1960	6. 42.0/1958
7. 51.2/1989	7. 42.4/1962
8. 51.0/1994	8. 42.8/1977
9. 50.7/2014	8. 42.8/1973
10. 50.6/1984	10. 43.2/1980

April

Normal Average Temperature: 54.5	
Warmest Aprils	Coldest Aprils
1. 60.5/1989	1. 44.9/1967
2. 59.0/1992	2. 46.3/1975
3. 58.9/1950	3. 47.9/1983
4. 58.8/1962	4. 48.3/1963
4. 58.8/1949	5. 49.2/1998
6. 58.6/1954	6. 49.5/1970
7. 58.5/2013	7. 49.8/1999
8. 58.2/1990	8. 49.9/2010
9. 58.0/1959	8. 49.9/1955
10. 57.8/2014	10. 50.1/2003
10. 57.8/1985	

May

Normal Average Temperature: 63.3	
Warmest Mays	Coldest Mays
1. 68.6/2009	1. 54.1/1998
1. 68.6/1984	2. 55.6/1977
3. 68.4/2001	3. 55.5/1953
4. 66.9/1954	4. 56.0/2010
5. 66.7/1966	5. 57.4/1980
6. 66.6/1992	6. 57.5/1971
7. 66.3/2000	7. 57.7/1995
7. 66.3/1997	8. 57.8/1991
9. 65.8/1947	9. 58.0/2011
10. 65.6/1969	10. 58.2/1955

June

Normal Average Temperature: 71.5	
Warmest Junes	Coldest Junes
1. 75.9/2015	1. 65.0/1944
1. 75.9/1960	2. 65.3/1995
3. 75.8/2013	2. 65.3/1963
3. 75.8/1981	4. 65.5/1998
5. 75.6/1961	5. 67.1/1965
6. 74.7/2002	5. 67.1/1952
7. 74.6/2014	7. 67.4/1980
8. 74.4/1985	8. 67.6/1945
9. 74.0/1977	9. 67.9/1967
10. 73.9/1974	9. 67.9/1946

July

Normal Average Temperature: 77.3	
Warmest Julys	Coldest Julys
1. 80.6/2005	1. 72.5/1983
2. 80.1/2003	2. 72.7/1987
3. 80.0/1959	3. 72.8/1947
4. 79.8/2014	4. 73.3/1986
4. 79.8/2002	5. 73.9/1997
4. 79.8/1994	6. 74.0/1944
7. 79.7/2006	7. 74.5/1995
8. 79.6/2007	8. 74.6/2001
9. 79.6/1953	9. 74.7/1992
10. 79.4/2013	9. 74.7/1965
10. 79.4/2010	9. 74.7/1962

August

Normal Average Temperature: 75.0	
Warmest Augusts	Coldest Augusts
1. 78.1/1971	1. 70.2/1976
2. 77.9/1970	2. 70.4/1947
3. 77.9/1967	3. 71.2/1954
4. 77.7/2015	4. 71.7/1968
4. 77.7/2012	5. 71.8/1956
6. 77.4/1958	6. 72.0/1999
7. 77.3/1966	7. 72.2/1989
8. 77.1/2001	7. 72.2/1946
9. 76.9/1977	9. 72.6/1983
10. 76.8/1994	9. 72.6/1979
10. 76.8/1969	9. 72.6/1953

September

Normal Average Temperature: 67.6	
Warmest Septembers	Coldest Septembers
1. 71.3/2014	1. 60.6/1986
2. 71.0/2015	2. 61.9/1985
3. 70.9/1951	3. 63.2/1965
4. 70.5/2003	4. 63.5/2005
4. 70.5/1974	5. 63.8/1978
4. 70.5/1960	6. 64.6/1946
7. 70.3/1979	7. 64.7/1982
8. 70.1/2009	8. 65.0/1970
8. 70.1/1981	9. 65.1/1961
8. 70.1/1943	10. 65.2/1972

October

Normal Average Temperature: 56.8	
Warmest Octobers	Coldest Octobers
1. 61.8/1988	1. 52.3/1984
2. 61.6/1964	2. 52.4/1969
3. 61.2/2015	3. 52.5/1971
3. 61.2/2003	4. 52.7/1998
5. 61.1/2014	5. 52.9/2013
6. 60.9/1965	6. 53.1/1981
7. 60.8/1952	7. 53.8/2004
8. 60.6/2001	7. 53.8/1972
9. 60.3/1950	9. 53.9/1986
10. 60.2/1992	9. 53.9/1957
10. 60.2/1978	
10. 60.2/1963	

November

Normal Average Temperature: 45.2	
Warmest Novembers	Coldest Novembers
1. 52.8/1949	1. 37.2/1994
2. 51.1/1995	2. 39.9/2000
3. 50.3/1976	3. 40.4/1982
4. 50.1/1950	4. 40.5/2011
5. 49.9/2008	4. 40.5/2003
6. 49.6/1977	6. 41.4/1947
7. 49.3/1967	7. 41.8/1985
8. 48.8/1959	7. 41.8/1964
9. 48.4/2014	9. 41.9/1952
9. 48.4/1954	10. 42.4/1984

December

Normal Average Temperature: 37.7	
Warmest Decembers	Coldest Decembers
1. 45.1/1950	1. 31.6/1990
2. 44.1/1958	2. 32.1/1984
3. 42.7/1981	3. 32.5/1948
3. 42.7/1980	4. 32.4/1987
5. 42.2/1975	5. 33.5/1971
6. 42.0/1977	6. 33.9/1968
7. 41.5/1963	7. 34.0/2008
7. 41.5/1956	8. 34.0/1967
9. 40.9/1957	9. 34.3/1992
9. 40.9/1989	10. 34.6/2007
	10. 34.6/1988

Warmest and Coldest Months Overall

Warmest Months	Coldest Months
1. 80.6/July 2005	1. 23.8/January 1949
2. 80.1/July 2003	2. 27.2/January 1955
3. 80.0/July 1959	3. 29.7/January 1974
4. 79.8/July 2002	4. 30.1/February 1969
4. 79.8/July 1994	5. 30.4/January 1952
6. 79.7/July 2006	6. 30.8/January 1993
7. 79.6/July 2007	7. 31.6/December 1990
7. 79.6/July 1953	8. 31.7/January 1973
9. 79.4/July 2013	9. 31.9/January 1982
9. 79.4/July 2010	10. 32.1/December 1984
	10. 32.1/January 1957

Annual

Normal Average Temperature: 56.6	
Warmest Years	Coldest Years
1. 59.5/2014	1. 53.8/1998
2. 59.1/2015	2. 54.0/1982
3. 57.9/1950	2. 54.0/1955
4. 57.8/1981	4. 54.7/1948
5. 57.6/1959	5. 54.8/1969
6. 57.5/2013	5. 54.8/1952
7. 57.2/2003	7. 54.9/1993
7. 57.2/1996	8. 55.3/2011
7. 57.2/1960	9. 55.3/1975
10. 57.1/2007	9. 55.3/1973
10. 57.1/1977	

Average Monthly and Annual Temperatures at Bishop

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
1943	-	-	-	-	-	-	-	-	70.1	57.8	47.4	40.4	-
1944	37.6	37.4	46.0	52.4	62.0	65.0	74.0	73.8	69.4	58.6	43.6	40.3	55.0
1945	39.9	42.5	43.6	55.0	60.6	67.6	78.8	73.0	67.6	56.6	43.6	36.8	55.5
1946	38.0	39.2	46.2	M	62.5	67.9	M	72.2	64.6	50.8	38.9	41.2	M
1947	37.8	44.8	50.4	54.6	65.8	68.0	72.8	70.4	69.6	57.2	41.4	36.2	55.8
1948	40.5	38.0	41.6	52.9	60.6	69.2	76.6	73.3	68.3	57.7	45.2	32.5	54.7
1949	23.8	35.8	44.7	58.8	62.4	73.2	76.8	73.2	70.0	56.6	52.8	37.3	55.5
1950	32.9	45.2	48.3	58.9	63.2	70.2	78.5	75.0	66.9	60.3	50.1	45.1	57.9
1951	39.1	41.9	48.1	56.3	63.9	72.0	78.6	74.4	70.9	56.5	44.6	34.7	56.7
1952	30.4	41.3	40.6	54.8	64.2	67.1	76.7	75.0	67.9	60.8	41.9	36.8	54.8
1953	43.5	42.2	47.5	54.1	55.5	68.0	79.6	72.6	70.0	55.1	46.5	39.6	56.2
1954	38.0	46.4	43.8	58.6	66.9	70.0	77.4	71.2	65.8	56.5	48.4	37.3	56.7
1955	27.2	37.8	45.5	49.9	58.2	69.2	74.8	75.8	67.1	58.4	45.3	39.1	54.0
1956	39.2	37.6	48.1	52.9	61.3	71.3	75.2	71.8	68.9	54.8	47.3	41.5	55.8
1957	32.1	45.5	49.4	53.8	59.8	73.2	74.9	73.1	67.8	53.9	44.0	40.9	55.7
1958	39.9	44.4	42.0	42.2	64.7	69.0	75.8	77.4	68.3	59.9	47.2	44.1	57.0
1959	41.0	38.5	50.5	58.0	60.3	73.6	80.0	73.8	65.9	59.7	48.8	40.6	57.6
1960	33.2	40.4	51.6	56.8	63.0	75.9	78.4	76.1	70.5	56.9	43.9	39.7	57.2
1961	40.5	44.6	47.5	56.2	61.5	75.6	79.1	74.7	65.1	56.4	43.0	37.9	56.8
1962	38.3	40.7	42.4	58.8	58.4	69.5	74.7	73.9	67.4	59.7	47.4	40.6	56.0
1963	36.5	48.6	44.5	48.3	63.0	65.3	74.8	73.1	69.5	60.2	45.9	41.5	55.9
1964	35.3	42.4	44.5	52.7	60.0	70.0	77.0	75.5	65.9	61.6	41.8	39.8	55.5
1965	41.0	43.8	46.7	53.1	59.4	67.1	74.7	74.2	63.2	60.9	46.3	36.7	55.6
1966	34.9	39.2	49.6	57.4	66.7	71.4	75.6	77.3	67.1	58.4	46.5	39.9	57.0
1967	39.8	43.6	47.5	44.9	61.8	67.9	78.5	77.9	68.1	59.3	49.3	34.0	56.0
1968	37.9	47.3	48.2	53.9	63.3	73.5	77.8	71.7	68.0	58.5	45.9	33.9	56.7
1969	38.5	30.1	40.1	54.1	65.6	68.9	76.5	76.8	69.4	52.4	46.5	39.3	54.8
1970	37.9	45.3	46.9	49.5	64.2	70.6	77.8	77.9	65.0	54.9	45.8	35.4	55.9
1971	41.5	43.0	47.4	52.9	57.5	70.4	78.4	78.1	66.5	52.5	43.2	33.5	55.4
1972	37.7	44.8	55.0	53.7	62.9	72.6	78.8	74.6	65.2	53.8	43.0	34.8	56.4
1973	31.7	40.6	42.8	52.2	65.4	72.3	77.2	73.7	66.7	56.2	43.4	40.5	55.3
1974	29.7	41.8	49.0	52.7	64.6	73.9	76.4	73.7	70.5	55.7	45.8	36.9	55.9
1975	39.4	41.4	44.2	46.3	61.6	70.1	77.7	73.0	69.6	54.3	43.5	42.2	55.3
1976	40.0	40.3	46.3	50.7	64.7	69.3	76.4	70.2	66.8	57.6	50.3	39.1	56.0
1977	38.0	46.1	42.8	56.8	55.6	74.0	76.8	76.9	66.7	59.4	49.6	42.0	57.1
1978	39.0	42.7	49.7	50.9	60.7	70.3	76.1	74.6	63.8	60.2	43.0	35.6	55.6
1979	34.8	38.7	48.2	55.1	64.0	70.4	76.5	72.6	70.3	57.9	43.6	38.9	55.9
1980	40.2	42.5	43.2	53.0	57.4	67.4	76.6	74.1	66.5	56.5	45.9	42.7	55.5
1981	39.4	44.7	46.2	56.8	63.6	75.8	77.6	76.7	70.1	53.1	46.8	42.7	57.8
1982	31.9	43.5	43.8	52.1	62.3	68.3	75.3	74.4	64.7	54.5	40.4	37.3	54.0
1983	39.7	43.1	46.2	47.9	61.0	70.0	72.5	72.6	68.4	57.3	45.0	40.6	55.4
1984	42.4	43.1	50.6	52.0	68.6	70.5	78.0	75.1	69.4	52.3	42.4	32.1	56.4
1985	38.1	41.7	44.3	57.8	62.6	74.4	78.1	73.2	61.9	54.4	41.8	38.9	55.6
1986	42.3	44.0	50.0	53.0	62.8	72.1	73.3	75.6	60.6	53.9	45.6	38.1	55.9
1987	36.7	41.1	45.8	56.9	62.2	71.6	72.7	74.9	67.9	59.5	44.9	32.4	55.6
1988	36.8	44.9	49.0	53.8	61.1	70.4	79.2	75.1	66.4	61.8	45.3	34.6	56.5
1989	35.3	38.9	51.2	60.5	63.0	71.0	78.1	72.2	66.2	54.8	46.9	40.9	56.6
1990	38.2	39.1	50.5	58.2	61.3	71.7	77.7	73.3	67.8	57.7	45.8	31.6	56.1
1991	37.3	45.8	41.9	51.6	57.8	69.1	77.2	74.5	69.3	59.6	46.1	38.6	55.7
1992	37.5	44.0	47.5	59.0	66.6	68.6	74.7	76.3	69.1	60.2	43.5	34.3	56.8

1993	30.8	37.9	50.1	55.2	64.1	68.7	75.1	73.6	66.5	57.5	42.5	36.8	54.9
1994	39.9	37.7	51.0	55.6	62.4	73.9	79.8	76.8	65.5	54.5	37.2	36.9	55.9
1995	37.6	48.3	46.5	52.5	57.7	65.3	74.5	74.6	68.5	57.6	51.1	39.7	56.2
1996	40.5	43.5	48.4	56.1	63.7	72.4	78.8	76.4	66.1	55.1	45.1	39.8	57.2
1997	40.1	42.4	50.1	53.9	66.3	70.4	73.9	74.2	67.1	54.6	44.6	35.4	56.1
1998	39.2	38.1	47.1	49.2	54.1	65.5	75.7	76.2	66.9	52.7	43.4	37.3	53.8
1999	40.6	41.2	47.2	49.8	62.9	70.6	75.5	72.0	67.7	59.3	47.3	40.2	56.2
2000	39.7	42.5	48.1	57.4	66.3	73.8	75.1	75.0	66.5	55.1	39.9	40.3	56.6
2001	36.8	36.2	50.5	51.6	68.4	73.4	74.6	77.1	70.0	60.6	45.1	36.4	56.7
2002	36.6	44.0	45.0	55.5	63.0	74.7	79.8	75.0	68.1	55.5	46.5	36.6	56.7
2003	44.4	41.0	49.8	50.1	63.1	73.7	80.1	75.2	70.5	61.2	40.5	36.5	57.2
2004	37.1	39.5	55.0	55.5	63.7	72.3	77.3	73.7	65.7	53.8	43.5	38.0	56.3
2005	39.8	42.8	48.3	51.3	63.1	68.5	80.6	74.6	63.5	56.6	48.2	40.5	56.5
2006	35.1	42.9	41.4	54.1	64.6	73.8	79.7	72.7	65.7	54.7	47.0	38.1	55.8
2007	36.7	42.8	52.2	56.6	64.5	72.9	79.7	76.3	65.9	55.6	47.7	34.6	57.1
2008	35.4	42.0	48.3	53.7	60.9	70.9	78.1	76.7	67.2	56.3	49.9	34.0	56.1
2009	42.5	39.8	46.7	52.7	68.6	68.0	78.7	74.0	70.1	54.5	45.4	34.9	56.3
2010	36.7	41.3	45.8	49.9	56.0	72.7	79.4	74.0	68.6	57.2	43.6	40.4	55.5
2011	41.6	40.5	47.9	52.8	58.0	68.8	74.8	75.0	69.1	57.8	40.5	36.3	55.3
2012	39.4	41.7	47.9	55.5	64.5	71.2	75.1	77.7	69.6	57.6	45.4	35.8	56.8
2013	38.1	41.1	52.9	58.5	64.6	75.8	79.4	74.2	68.6	52.9	45.5	38.7	57.5
2014	44.9	46.1	50.7	57.8	64.6	74.6	79.8	74.4	71.3	61.1	48.4	40.2	59.5
2015	44.6	50.3	55.0	56.5	62.2	75.9	76.4	77.7	71.0	61.2	42.6	35.4	59.1

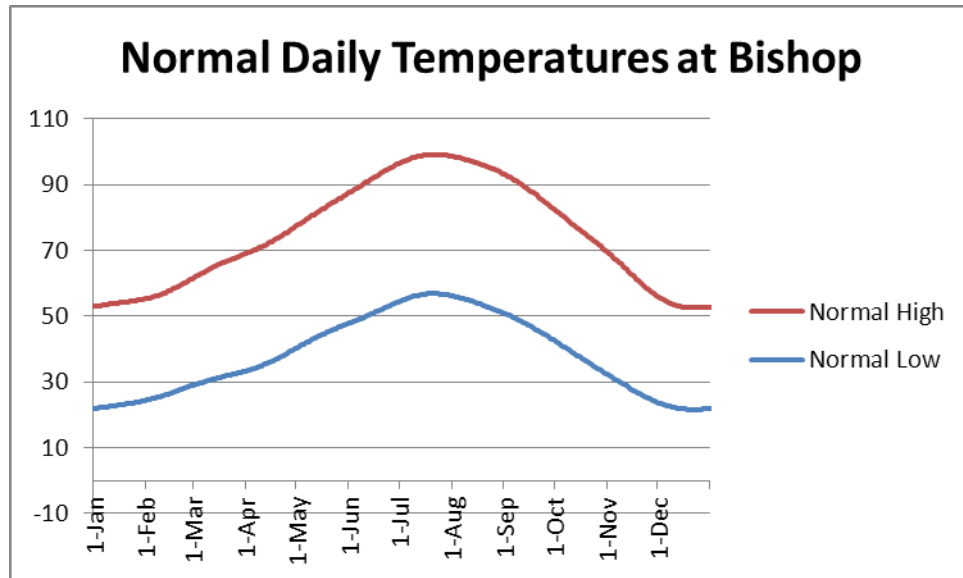


Figure 10 - Normal daily maximum and minimum temperatures at Bishop, California based on 1981-2010 normals.

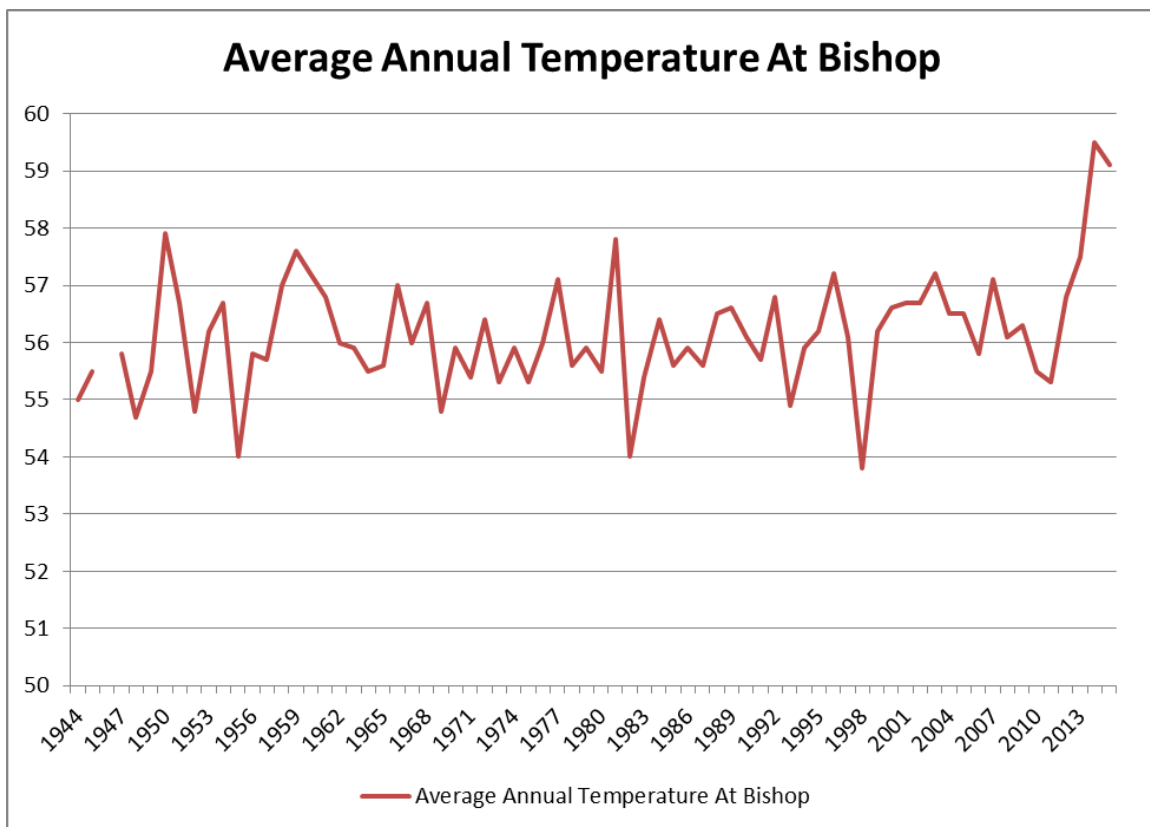


Figure 11 - Average Annual Temperature for Bishop, California from 1944-Present. Red line is the average annual temperature.

Highest Maximum Temperatures Recorded

110 degrees
July 10, 2002

109 degrees
July 1, 2013
June 30, 2013
July 22, 2003
July 31, 2000
July 16, 1972
July 15, 1972
June 22, 1954

108 degrees
June 20, 2015
June 29, 2013
July 5, 2007
July 19, 2005
July 18, 2005
July 26, 1975
July 14, 1972
June 30, 1972
June 21, 1961
July 26, 1945

Lowest Maximum Temperatures Recorded

19 degrees
January 22, 1962
January 11, 1949

21 degrees
December 14, 1967

22 degrees
January 10, 1949

24 degrees
December 21, 1990

25 degrees
January 9, 1974
January 4, 1974
January 9, 1949

Highest Minimum Temperatures Recorded

75 degrees
August 4, 1961

72 degrees
July 7, 2014
July 2, 2013
July 24, 2003
July 23, 2003
July 9, 1975

71 degrees
July 3, 2013
August 1, 2007
July 28, 2004
July 10, 1985
August 7, 1983
June 23, 1954

Lowest Minimum Temperatures Recorded

-8 degrees
December 22, 1990
December 27, 1988

-7 degrees
January 7, 1982
January 10, 1974

-6 degrees
January 20, 1955

-5 degrees
December 23, 1990

Highest Maximum Temperature By Year

Year	Date
1943	Incomplete data.
1944	106 on August 13 th
1945	108 on July 26 th
1946	Incomplete data.
1947	104 on July 18 th
1948	107 on July 16 th
1949	107 on July 16 th and July 17 th
1950	106 on August 19 th and September 2 nd
1951	105 on July 1 st and July 9 th
1952	101 on July 16 th , July 19 th , July 22 nd and August 4 th
1953	105 on July 6 th , July 7 th , July 11 th , July 20 th , July 21 st and July 23 rd
1954	109 on June 22 nd
1955	104 on June 8 th , July 13 th , July 17 th and August 11 th
1956	105 on June 28 th
1957	104 on June 24 th , June 26 th and June 27 th
1958	104 on July 12 th and July 13 th
1959	107 on July 17 th
1960	107 on July 17 th , July 18 th and July 19 th
1961	108 on June 21 st
1962	103 on August 13 th
1963	103 on August 15 th
1964	105 on July 24 th
1965	102 on August 5 th
1966	106 on August 6 th
1967	105 on July 1 st
1968	104 on June 22 nd and June 26 th
1969	103 on August 1 st , August 4 th , August 8 th and August 9 th
1970	106 on August 11 th
1971	106 on July 27 th
1972	109 on July 15 th and July 16 th
1973	106 on July 4 th
1974	105 on June 29 th
1975	108 on July 26 th
1976	105 on July 9 th
1977	107 on August 1 st
1978	106 on August 6 th and August 7 th
1979	106 on August 2 nd and August 3 rd
1980	107 on July 25 th

1981	107 on August 7 th , August 8 th and August 9 th
1982	105 on July 31 st
1983	103 on August 5 th
1984	107 on July 3 rd and July 4 th
1985	107 on June 18 th
1986	104 on August 4 th
1987	105 on July 14 th , August 3 rd , August 4 th and August 5 th
1988	107 on July 18 th
1989	106 on July 7 th
1990	105 on July 12 th
1991	106 on July 4 th
1992	103 on August 18 th
1993	107 on August 2 nd
1994	106 on August 16 th
1995	104 on July 28 th
1996	105 on July 22 nd
1997	104 on August 6 th
1998	107 on July 18 th
1999	105 on July 1 st
2000	109 on July 31 st
2001	105 on August 18 th
2002	110 on July 10 th
2003	109 on July 22 nd
2004	105 on August 11 th
2005	108 on July 18 th and July 19 th
2006	107 on June 25 th and July 17 th
2007	108 on July 5 th
2008	106 on July 8 th
2009	105 on July 17 th and July 27 th
2010	107 on July 18 th
2011	104 on July 2 nd and July 3 rd
2012	106 on July 11 th
2013	109 on June 30 th and July 1 st
2014	107 on July 13 th
2015	108 on June 20 th

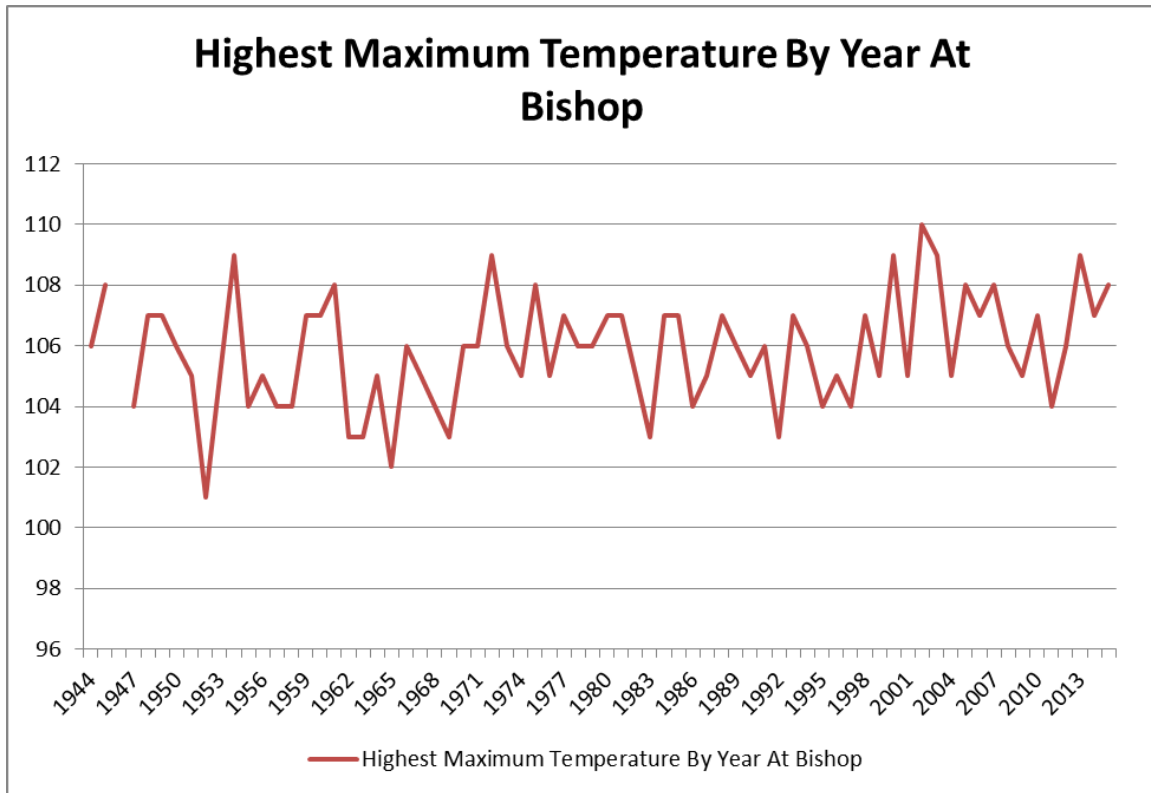


Figure 12 – Highest maximum temperature by year.

Lowest Maximum Temperature By Year

Year	Date
1943	Incomplete data.
1944	36 on January 26 th , February 20 th , February 21 st and February 22 nd
1945	37 on December 21 st
1946	34 on November 11 th
1947	36 on December 5 th
1948	37 on February 11 th , December 17 th , December 23 rd and December 24 th
1949	19 on January 11 th
1950	37 on January 8 th
1951	33 on December 31 st
1952	29 on January 1 st
1953	39 on February 23 rd
1954	40 on March 11 th and December 26 th
1955	34 on January 6 th
1956	35 on February 16 th
1957	30 on January 27 th
1958	37 on November 16 th
1959	37 on December 31 st
1960	35 on January 1 st
1961	36 on December 14 th
1962	19 on January 22 nd
1963	35 on January 12 th
1964	34 on January 22 nd
1965	37 on January 3 rd
1966	37 on January 1 st
1967	21 on December 14 th
1968	32 on December 20 th
1969	34 on January 29 th and February 28 th
1970	36 on December 20 th
1971	33 on January 3 rd
1972	29 on December 9 th
1973	35 on January 4 th
1974	25 on January 4 th and January
1975	35 on January 27 th
1976	32 on February 6 th
1977	34 on January 5 th
1978	30 on December 7 th
1979	32 on January 31 st
1980	38 on December 7 th
1981	36 on January 29 th
1982	30 on January 6 th

1983	37 on November 24 th
1984	28 on December 18 th
1985	35 on December 10 th
1986	43 on February 6 th
1987	30 on January 15 th and December 24 th
1988	26 on December 27 th
1989	28 on February 5 th
1990	24 on December 21 st
1991	38 on December 29 th
1992	35 on January 7 th
1993	33 on January 15 th
1994	38 on November 18 th
1995	35 on January 4 th and January 5 th
1996	36 on February 27 th
1997	31 on January 13 th
1998	32 on December 22 nd
1999	35 on January 25 th
2000	43 on March 6 th
2001	34 on February 11 th and February 12 th
2002	34 on January 29 th
2003	37 on December 28 th
2004	37 on December 28 th and December 29 th
2005	35 on January 4 th
2006	36 on January 3 rd and January 5 th
2007	29 on January 12 th
2008	34 on December 16 th , December 17 th and December 26 th
2009	34 on December 8 th
2010	32 on January 21 st
2011	32 on January 2 nd
2012	36 on December 26 th and December 28 th
2013	36 on December 8 th
2014	40 on December 30 th
2015	39 on December 28 th

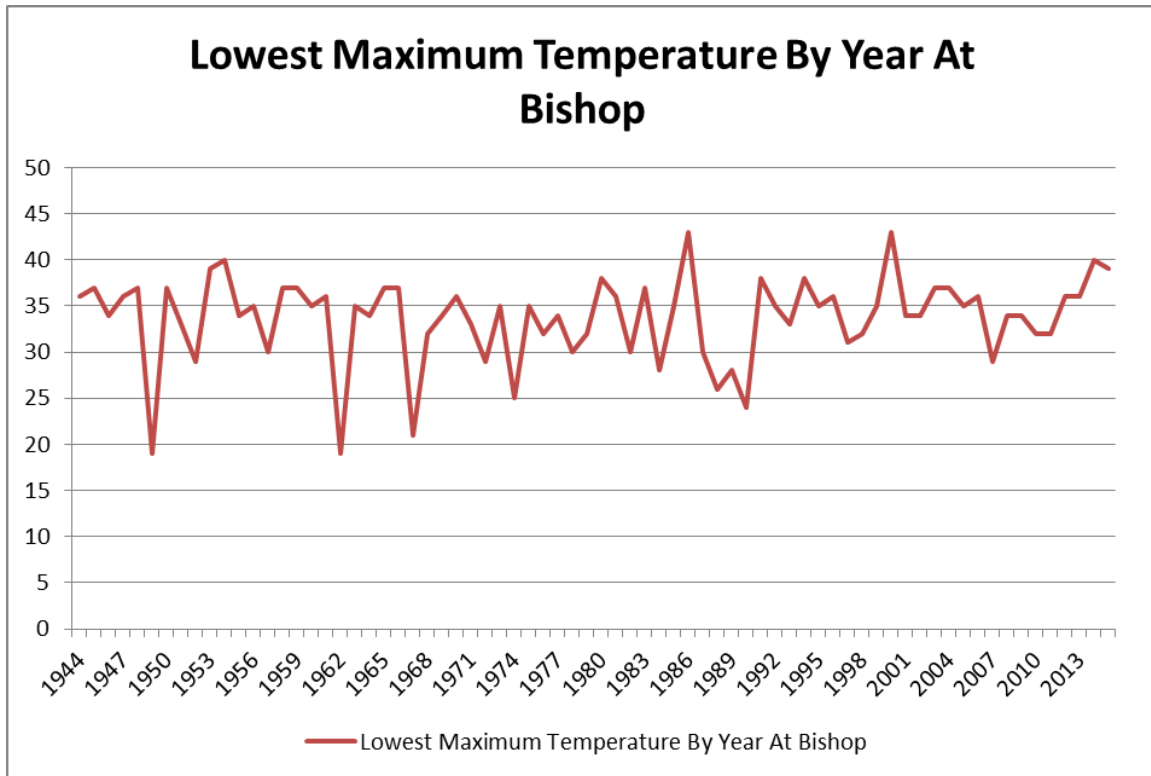


Figure 13 – Lowest maximum temperature by year.

Highest Minimum Temperature By Year

Year	Date
1943	Incomplete data.
1944	62 on August 13 th
1945	69 on July 27 th
1946	64 on July 23 rd
1947	60 on September 7 th
1948	65 on August 1 st
1949	67 on July 18 th
1950	68 on July 9 th
1951	70 on July 27 th
1952	69 on July 25 th
1953	69 on July 9 th
1954	71 on June 23 rd
1955	68 on July 15 th
1956	65 on July 20 th
1957	62 on June 25 th , June 27 th and July 6 th
1958	65 on July 14 th and August 15 th
1959	67 on July 18 th
1960	67 on July 21 st
1961	75 on August 4 th
1962	61 on August 16 th
1963	65 on August 7 th
1964	66 on July 25 th and August 10 th
1965	63 on July 16 th and August 1 st
1966	70 on July 30 th
1967	67 on July 12 th
1968	67 on June 23 rd and July 7 th
1969	68 on August 10 th
1970	68 on July 21 st
1971	68 on August 5 th
1972	70 on July 30 th
1973	64 on June 27 th
1974	68 on June 16 th
1975	72 on July 9 th
1976	67 on July 23 rd
1977	68 on June 27 th
1978	65 on July 27 th and August 6 th
1979	69 on August 6 th
1980	65 on August 1 st
1981	63 on June 23 rd , June 30 th , July 6 th and August 10 th
1982	66 on August 18 th
1983	71 on August 7 th

1984	67 on July 5 th
1985	71 on July 10 th
1986	63 on July 15 th
1987	63 on August 6 th
1988	67 on July 31 st
1989	67 on July 8 th
1990	69 on July 12 th
1991	70 on July 8 th
1992	67 on August 16 th
1993	62 on July 3 rd
1994	68 on August 8 th
1995	66 on August 3 rd
1996	67 on July 3 rd
1997	65 on July 17 th and August 20 th
1998	66 on July 22 nd
1999	67 on July 10 th
2000	68 on August 1 st
2001	70 on July 3 rd
2002	68 on July 13 th
2003	72 on July 23 rd and July 24 th
2004	71 on July 28 th
2005	68 on July 24 th
2006	70 on July 18 th
2007	71 on August 1 st and August 2 nd
2008	69 on July 21 st
2009	70 on July 23 rd
2010	69 on July 16 th
2011	65 on August 23 rd
2012	67 on July 13 th
2013	72 on July 2 nd
2014	72 on July 7 th
2015	70 on July 2 nd

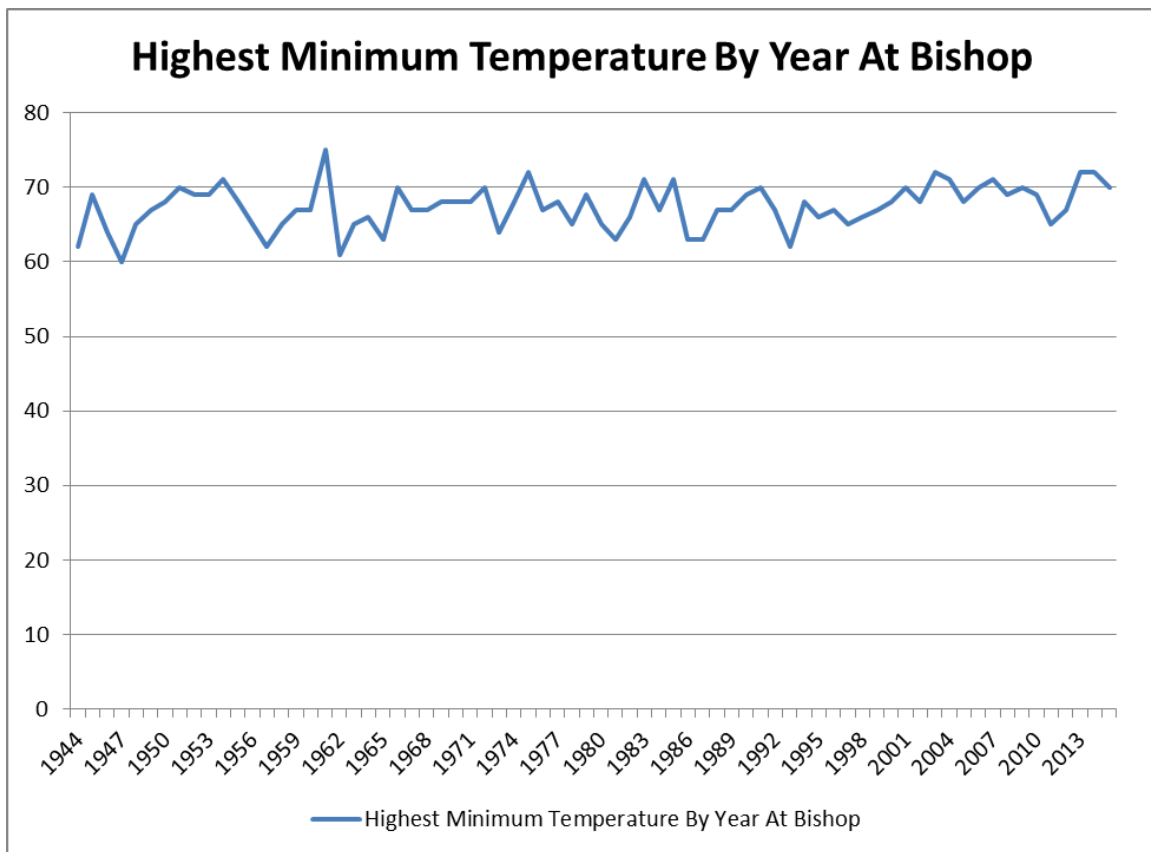


Figure 14 – Highest minimum temperature by year.

Lowest Minimum Temperature By Year

Year	Date
1943	Incomplete data.
1944	10 on February 24 th
1945	8 on December 14 th
1946	11 on February 5 th
1947	8 on December 9 th
1948	2 on December 25 th
1949	0 on January 25 th
1950	4 on January 7 th
1951	10 on December 9 th
1952	8 on January 19 th
1953	9 on December 23 rd and December 24 th
1954	9 on December 28 th
1955	-6 on January 20 th
1956	11 on February 16 th , December 9 th and December 21 st
1957	4 on January 28 th
1958	5 on November 17 th
1959	9 on January 4 th
1960	1 on January 2 nd
1961	10 on December 11 th
1962	3 on December 26 th
1963	2 on January 13 th
1964	0 on January 23 rd
1965	8 on January 1 st
1966	12 on January 22 nd , February 14 th and March 4 th
1967	-4 on December 21 st
1968	4 on December 22 nd
1969	-2 on February 7 th and February 8 th
1970	5 on January 4 th
1971	8 on February 27 th and December 11 th
1972	6 on December 12 th and December 14 th
1973	4 on January 5 th
1974	-7 on January 10 th
1975	8 on January 29 th and January 31 st
1976	8 on January 1 st
1977	14 on January 1 st
1978	8 on December 8 th
1979	6 on January 29 th
1980	13 on November 25 th
1981	12 on January 30 th
1982	-7 on January 7 th
1983	15 on January 21 st

1984	0 on December 17 th and December 22 nd
1985	9 on February 5 th and November 19 th
1986	11 on February 10 th
1987	8 on December 31 st
1988	-8 on December 27 th
1989	3 on February 7 th
1990	-8 on December 22 nd
1991	10 on January 30 th
1992	9 on December 27 th
1993	2 on January 12 th
1994	8 on December 9 th and December 10 th
1995	12 on January 2 nd
1996	13 on December 23 rd and December 24 th
1997	9 on December 26 th
1998	1 on December 22 nd
1999	12 on December 7 th
2000	8 on December 13 th
2001	12 on November 30 th
2002	6 on January 17 th
2003	12 on December 16 th and December 28 th
2004	7 on January 4 th
2005	11 on January 5 th
2006	9 on December 20 th
2007	1 on January 14 th
2008	7 on December 14 th and December 18 th
2009	5 on December 9 th
2010	12 on January 23 rd and November 27 th
2011	8 on December 23 rd
2012	5 on December 20 th and December 21 st
2013	3 on January 13 th
2014	6 on December 29 th
2015	5 on December 27 th

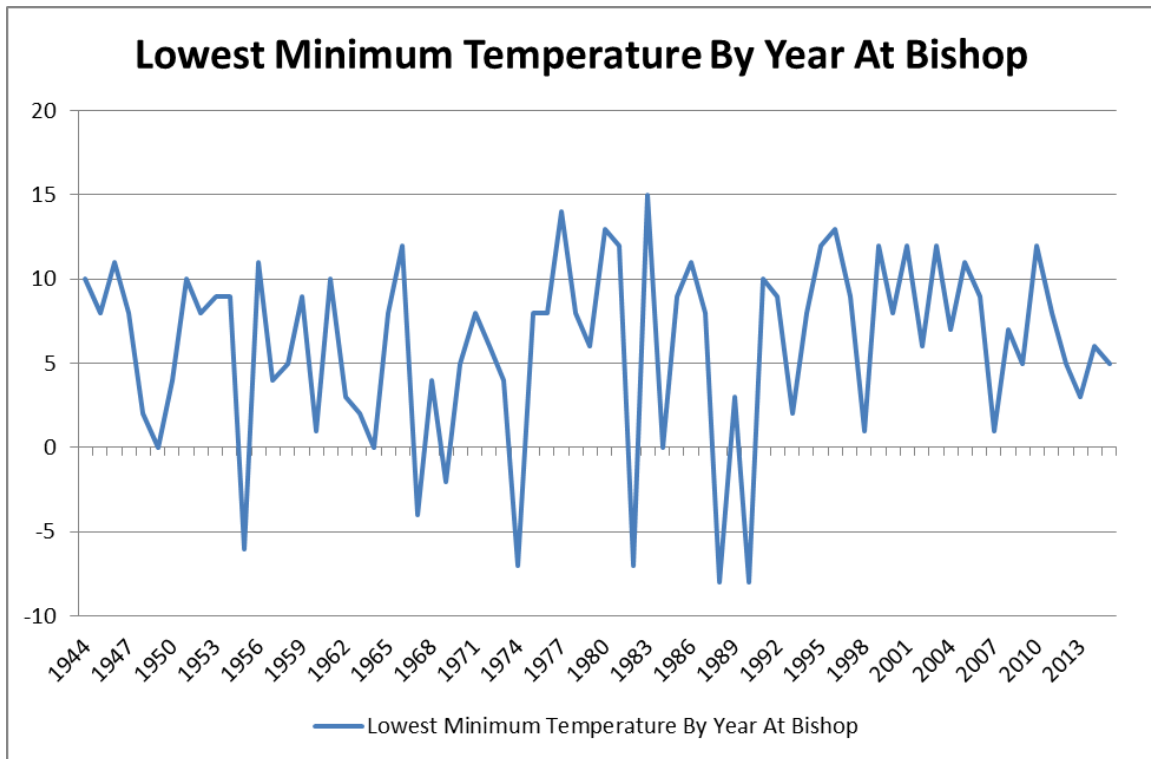


Figure 15 – Lowest minimum temperature by year.

Number of Days (Temperatures) at Bishop

With A High Temperature of 105 degrees or higher

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	0	0	0	0	0	5/2013*	9/2003	6/1978	1/1950	0	0	0	14/1972
Least	0	0	0	0	0	0/2012*	0/2015*	0/2014*	0/2015*	0	0	0	0/1997*
Normal	0	0	0	0	0	0.1	2.3	0.7	0	0	0	0	3.1

Normals above are based on the period from 1981-2010 and are not computed by NCEI.

*Most recent of multiple occurrences.

With A High Temperature of 100 degrees or higher

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	0	0	0	0	2/1951& 2003	17/2015	23/1953	18/2001	7/1955	0	0	0	43/1981& 2007
Least	0	0	0	0	0/2015*	0/2012*	1/1944& 1962	0/1956, 1968& 1999	0/2013*	0	0	0	5/1983
Normal	0	0	0	0	0.3	4.1	12.7	7.4	0.4	0	0	0	24.9

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

*Most recent of multiple occurrences.

With A High Temperature of 90 degrees or higher

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	0	0	0	7/1989	20/2001	28/1960 &1986	31/2010*	31/2011*	26/2009	8/1964	0	0	133/2001
Least	0	0	0	0/2015*	0/2011*	6/1944	25/1979 &1982	15/1976	3/1972	0/2013*	0	0	79/1998
Normal	0	0	0	0.5	6.7	19.7	29.3	28.0	14.4	1.2	0	0	99.9

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

*Most recent of multiple occurrences.

With A High Temperature of 80 degrees or higher

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	0	2/2015*	12/1972	19/1989	30/2009	30/2014*	31/2014*	31/2015*	30/2012*	27/2003	4/1949& 1950	0	179/1966& 2014
Least	0	0/2013*	0/2014*	0/2003*	7/1971	20/1963	28/1987	29/2000*	13/1986	0/1957 &1981	0/2014*	0	119/1998
Normal	0	0.1	1.0	7.6	19.6	27.6	30.7	30.8	25.8	10.7	0.3	0	154.2

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

*Most recent of multiple occurrences.

With A High Temperature of 32 degrees or below

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	9/1949	2/1989	0	0	0	0	0	0	0	0	0	3/1988	11/1949
Least	0/2015*	0/2015*	0	0	0	0	0	0	0	0	0	0/2015*	0/2015*
Normal	0.1	0.1	0	0	0	0	0	0	0	0	0	0.2	0.4

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

*Most recent of multiple occurrences.

With A Low Temperature of 32 degrees or below

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	31/2010*	29/1984*	29/1980	20/1955	9/2010	2/1988 &2011	0	0	8/1986	17/1985	30/2011*	31/2015*	169/1998
Least	26/2015*	14/1963	7/2004	0/1992	0/2015*	0/2015*	0	0	0/2015*	0/2015*	13/1950	25/2010 &2014	114/2014
Normal	28.9	22.3	16.4	7.3	1.1	0.1	0	0	0.3	5.8	22.8	28.8	133.7

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

*Most recent of multiple occurrences.

With A Low Temperature of 20 degrees or below

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	30/1949	19/1969	12/1969	2/1982 &2010	0	0	0	0	0	3/1971	18/1994	25/1948	78/1948
Least	0/2003	0/2015*	0/2014*	0/2015*	0	0	0	0	0	0/2015*	0/2013*	0/1950	12/1983 &2005
Normal	9.5	4.2	1.1	0.1	0	0	0	0	0	0.1	3.6	10.8	29.4

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

*Most recent of multiple occurrences.

With A Low Temperature of 0 degrees or below

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	4/1955	2/1969	0	0	0	0	0	0	0	0	0	3/1990	4/1955
Least	0/2015*	0/2015*	0	0	0	0	0	0	0	0	0	0/2015*	0/2015*
Normal	**0	0	0	0	0	0	0	0	0	0	0	0.1	0.2

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

*Most recent of multiple occurrences.

**Occurred once in a 30 year period.

Number of Consecutive Days – Temperature

<u>High Temperature of 108 degrees or higher</u>
3 days from June 29, 2013 through July 1, 2013
3 days from July 14, 1972 through July 16, 1972

<u>High Temperature of 105 degrees or higher</u>
7 days from July 14, 2005 through July 20, 2005
7 days from July 9, 2003 through July 15, 2003
6 days from June 27, 2013 through July 2, 2013
6 days from July 13, 1972 through July 18, 1972

<u>High Temperature of 100 degrees or higher</u>
17 days from June 26, 1984 through July 12, 1984
16 days from July 8, 1961 through July 23, 1961
15 days from July 4, 2003 through July 18, 2003
15 days from July 8, 1988 through July 22, 1988

<u>High Temperature of 90 degrees or higher</u>
84 days from June 21, 1956 through September 12, 1956
83 days from June 16, 1981 through September 6, 1981
81 days from June 10, 2007 through August 29, 2007
80 days from June 13, 2008 through August 31, 2008

<u>High Temperature of 80 degrees or higher</u>
148 days from May 15, 2003 through October 9, 2003
136 days from May 25, 1960 through October 7, 1960
133 days from May 22, 1974 through October 1, 1974
128 days from May 17, 2013 through September 21, 2013

<u>High Temperature of 32 degrees or lower</u>
5 days from January 9, 1949 through January 13, 1949
4 days from January 1, 1974 through January 4, 1974
3 days from December 26, 1988 through December 28, 1988
3 days from January 9, 1974 through January 11, 1974

<u>Low Temperature of 70 degrees or higher</u>
2 days from July 2, 2013 through July 3, 2013
2 days from July 23, 2003 through July 24, 2003

<u>Low Temperature of 60 degrees or higher</u>
15 days from July 17, 2006 through July 31, 2006
13 days from July 22, 1980 through August 3, 1980
11 days from July 25, 1967 through August 4, 1967
11 days from July 10, 1961 through July 20, 1961
11 days from June 19, 1961 through June 29, 1961

<u>Low Temperature of 33 degrees or higher (freeze-free period)</u>
222 days from March 27, 1992 through November 3, 1992
202 days from April 11, 2015 through November 3, 2015
194 days from April 15, 2014 through October 25, 2014
190 days from April 17, 2012 through October 23, 2012

<u>Low Temperature of 32 degrees or below</u>
117 days from November 1, 1993 through February 25, 1994
102 days from November 9, 1988 through February 18, 1989
92 days from October 27, 2011 through January 26, 2012
89 days from November 25, 1965 through February 21, 1965

<u>Low Temperature of 20 degrees or below</u>
30 days from January 8, 1949 through February 6, 1949
20 days from December 18, 1948 through January 6, 1949
18 days from January 5, 1963 through January 22, 1963

<u>Low Temperature of 0 degrees or below</u>
3 days from December 21, 1990 through December 23, 1990

**Earliest and Latest First Occurrence and Last Occurrence for
Specific Temperature Thresholds and Averages**

High Temperature of 100 Degrees or Higher

	Earliest	Latest
First Occurrence	May 5, 1946	July 16, 1980 & July 16, 1995
Last Occurrence	July 8, 1999	September 14, 1971
Average	June 18	August 22

High Temperature of 90 Degrees or Higher

	Earliest	Latest
First Occurrence	April 1, 1966	June 19, 1998
Last Occurrence	September 3, 1972	October 25, 1959
Average	May 15	September 26

High Temperature of 80 Degrees or Higher

	Earliest	Latest
First Occurrence	February 13, 2014	May 15, 1983
Last Occurrence	September 30, 1981	November 24, 1949
Average	April 8	October 22

Low Temperature of 32 Degrees or Below

	Earliest	Latest
First Occurrence	September 11, 1952	November 9, 1988
Last Occurrence	March 26, 1992	June 16, 1944
Average	May 1	October 15

Low Temperature of 20 Degrees or Below

	Earliest	Latest
First Occurrence	October 22, 1996	December 17, 1995
Last Occurrence	January 6, 1995	April 21, 2008
Average	March 8	November 16

Heating and Cooling Degree Days

Listed below are the thirty year normal heating and cooling degree days (based on 65°F) by month.

	Monthly Normal Heating Degree Days	Monthly Normal Cooling Degree Days	Season Normal Heating Degree Days	Season Normal Cooling Degree Days
January	822	0	2569	0
February	638	0	3207	0
March	516	0	3723	0
April	319	4	4042	4
May	116	64	4158	68
June	19	214	4177	282
July	1	382	1	664
August	1	313	2	977
September	41	119	43	1096
October	264	8	307	1104
November	594	0	901	0
December	846	0	1747	0
Annual	4177	1104	N/A	N/A

Precipitation Record

Daily records of precipitation in Bishop started on September 1, 1943. All precipitation data is given in inches. An overview of each month's precipitation is listed below, followed by normal and the record highest amount for each day and month. Normals are from 1981-2010 and provided by NOAA's National Centers for Environmental Information (NCEI).

It should be noted that unlike records of temperature, which were obtained from a thermograph for a twenty four period, values for precipitation were obtained from manual measurements taken in the days prior to automated gauges or weigh rain gauge charts being available. As a result of not being staffed 24 hours, "daily" precipitation values for Bishop from the period from January 15, 1949 through January 27, 1954 were taken from values for the period from 4:30 PM to 4:30 PM Pacific Standard Time rather than Midnight to Midnight. Therefore it is possible rain that fell later on that date or on an earlier day got counted in a subsequent day's report. Effective January 28, 1954 precipitation values were once again made from Midnight to Midnight by use of a weighing rain gauge. Precipitation measurements remained Midnight to Midnight when ASOS was commissioned, with the rain gauge being changed to a tipping bucket gauge. From March 11, 2005 through May 2010, an all-weather precipitation gauge or AWPAG was used to measure precipitation, however due to equipment issues, precipitation measurements were switched back to a tipping bucket gauge. For events where an accumulation of snow occurs, a nearby CoCoRaHS site is used in place of the ASOS tipping bucket precipitation total if it is felt the ASOS total under-measured precipitation.

Month	Normal Precipitation
January	1.05
February	0.85
March	0.53
April	0.26
May	0.19
June	0.19
July	0.16
August	0.13
September	0.19
October	0.30
November	0.52
December	0.80
Annual	5.17

January

Period of Record: 1944-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.05	0.91/1997
2	0.04	2.33/2006
3	0.04	0.34/2005
4	0.04	<u>4.00/2008</u>
5	0.05	0.85/1982
6	0.03	0.52/1974
7	0.04	0.70/1995
8	0.04	1.15/2005
9	0.04	0.66/2005
10	0.04	1.78/1995
11	0.04	0.60/1980
12	0.04	0.92/1957
13	0.04	0.76/1990
14	0.05	0.72/1978
15	0.03	3.32/1952
16	0.04	1.15/1978
17	0.04	0.60/1988
18	0.03	2.23/1973
19	0.03	2.24/1969
20	0.03	0.51/2010
21	0.02	1.73/1969
22	0.03	0.70/1983
23	0.02	0.60/2012
24	0.03	1.21/1969
25	0.02	2.33/1969
26	0.03	1.08/1969
27	0.02	0.36/2008
28	0.02	0.33/2007
29	0.03	0.29/1981
30	0.02	1.67/1963
31	0.03	1.53/1963

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

February

Period of Record: 1944-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.03	2.36/1945
2	0.03	2.62/1945
3	0.02	0.48/1998
4	0.03	0.08/1989
5	0.03	0.48/1978
6	0.03	0.69/1969
7	0.03	0.91/1994
8	0.03	0.89/1962
9	0.02	1.80/1962
10	0.03	1.34/1962
11	0.03	0.74/1992
12	0.03	0.62/1986
13	0.03	2.08/1954
14	0.03	0.90/1986
15	0.04	0.35/1959
16	0.03	1.28/1959
17	0.03	0.28/1980
18	0.03	1.24/1993
19	0.04	0.51/1993
20	0.03	0.37/2000
21	0.03	0.97/1980
22	0.04	0.92/1944
23	0.03	1.13/1998
24	0.03	3.50/1969
25	0.03	1.12/2004
26	0.03	0.34/1993
27	0.03	0.71/2014
28	0.03	0.95/2014
29	-	T/1988*

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

March

Period of Record: 1944-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.02	1.49/1974
2	0.03	0.51/1981
3	0.02	0.22/1991
4	0.02	1.75/1991
5	0.02	0.27/2000
6	0.03	0.19/1962
7	0.02	0.23/1952
8	0.02	0.52/1986
9	0.02	0.08/1963
10	0.02	1.53/1995
11	0.02	0.34/1995
12	0.02	0.33/1996*
13	0.02	0.25/1996
14	0.01	0.08/1963
15	0.02	1.24/1952
16	0.02	0.27/1952
17	0.01	0.42/1982
18	0.02	0.23/1991
19	0.01	0.70/1946
20	0.02	0.50/1954
21	0.01	0.58/1969
22	0.01	1.18/2005
23	0.02	0.31/1983
24	0.01	0.40/1950
25	0.02	0.50/1993
26	0.01	0.27/1993
27	0.01	0.21/1979
28	0.01	0.39/1963
29	0.02	0.03/1982
30	0.01	0.45/1946
31	0.01	0.52/1978

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

April

Period of Record: 1944-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.01	0.36/1965
2	0.01	0.15/1967
3	0.02	1.10/1958
4	0.01	0.14/2006
5	0.01	0.28/2010
6	0.01	0.41/1986
7	0.01	0.33/2001
8	0.02	0.10/1950
9	0.01	0.08/1948
10	0.01	0.71/1952
11	0.01	1.58/1982
12	0.00	0.89/1956
13	0.01	0.70/1956
14	0.01	0.18/2003
15	0.01	0.51/1988
16	0.01	0.35/1970
17	0.01	0.45/2000
18	0.00	0.57/1956
19	0.01	0.46/1964
20	0.01	0.17/1990
21	0.01	0.29/1967
22	0.00	0.25/1980
23	0.01	0.11/1980
24	0.01	0.06/1947
25	0.00	0.13/1951
26	0.01	0.06/1951*
27	0.00	0.11/1944
28	0.01	0.09/1944
29	0.00	0.06/1958
30	0.01	0.35/1955

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

May

Period of Record: 1944-Present
Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.01	0.37/1955
2	0.00	0.05/1982
3	0.01	0.07/1969
4	0.00	0.45/1995
5	0.01	0.22/1971
6	0.00	0.56/1971
7	0.01	0.45/1955
8	0.00	0.63/2015
9	0.01	0.21/1949
10	0.00	0.10/1990
11	0.01	0.29/1957
12	0.00	0.15/1998
13	0.01	0.21/1998
14	0.01	0.38/1962
15	0.00	0.95/1953
16	0.01	0.27/1962
17	0.00	0.40/1994
18	0.01	0.30/1948
19	0.01	0.18/1949
20	0.00	0.36/1987
21	0.01	0.18/1959
22	0.01	0.09/2014
23	0.01	0.53/2015
24	0.00	0.10/1956
25	0.01	0.28/1964
26	0.01	0.51/1981
27	0.00	0.34/1962
28	0.01	0.21/1945
29	0.01	0.04/2011
30	0.00	0.05/1949
31	0.01	0.04/1963

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

June

Period of Record: 1944-Present
Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.01	0.21/1965
2	0.00	0.65/1985
3	0.01	0.56/1998
4	0.01	0.04/1945
5	0.01	0.22/1948
6	0.00	0.10/1963
7	0.01	0.24/1972
8	0.01	0.08/1977
9	0.01	0.24/1977
10	0.01	0.33/2015
11	0.00	0.25/1963
12	0.01	0.49/1998
13	0.00	0.20/2009
14	0.01	0.24/1997
15	0.01	0.04/1969*
16	0.01	0.30/2009
17	0.00	0.05/1969
18	0.01	0.06/1977
19	0.00	0.68/1982
20	0.01	0.21/1951
21	0.00	0.03/1944
22	0.01	T/2001
23	0.00	0.04/1977
24	0.01	0.01/1989
25	0.00	0.15/1948
26	0.01	0.03/1951
27	0.01	0.14/1973
28	0.00	0.12/1995
29	0.01	0.53/1982
30	0.00	0.14/1977

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

July

Period of Record: 1944-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.00	0.10/1980
2	0.01	0.05/1949
3	0.00	0.23/2015
4	0.01	0.03/2001
5	0.00	0.08/2011
6	0.01	0.32/2001
7	0.00	0.06/2001
8	0.01	0.18/1968
9	0.00	0.31/2001
10	0.00	0.02/1970*
11	0.01	0.12/1996
12	0.00	0.18/1987
13	0.01	0.10/1969
14	0.01	0.48/1967
15	0.00	0.06/1976
16	0.01	0.83/1976
17	0.00	0.14/1953
18	0.01	0.20/1965
19	0.01	0.37/1984
20	0.00	0.10/2009
21	0.01	0.38/1984
22	0.00	0.04/1997
23	0.01	0.17/1997
24	0.00	0.36/2007
25	0.01	0.50/1946
26	0.00	0.02/1985*
27	0.01	0.30/1976
28	0.00	0.07/2014
29	0.01	0.11/1960
30	0.01	0.40/1968
31	0.01	0.23/1976

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

August

Period of Record: 1944-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.01	0.10/1971
2	0.00	0.15/1945
3	0.01	0.20/2014
4	0.00	0.10/2012
5	0.00	0.16/2005
6	0.01	0.06/1992
7	0.00	0.30/1963
8	0.00	0.17/1983
9	0.01	0.17/1983
10	0.00	0.06/1961
11	0.01	0.25/1990
12	0.00	0.14/1990
13	0.00	0.14/1968
14	0.01	0.09/2005
15	0.00	0.26/2005
16	0.01	0.18/1965
17	0.00	0.43/1977
18	0.00	0.16/2013
19	0.01	0.04/1975
20	0.00	0.05/1975
21	0.01	0.42/1984
22	0.00	0.07/2012
23	0.01	0.27/1982
24	0.00	0.03/1982
25	0.01	0.03/1999
26	0.00	0.16/1999
27	0.01	0.18/1982
28	0.00	0.08/1972
29	0.00	0.20/2000
30	0.01	0.23/1963
31	0.00	0.02/1998

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

September

Period of Record: 1943-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.00	0.14/1954
2	0.01	0.18/1945
3	0.00	0.07/1985
4	0.00	0.28/1978
5	0.01	0.28/1972
6	0.00	0.07/1950
7	0.01	0.39/1950
8	0.00	0.59/1975
9	0.00	0.13/1975
10	0.01	0.38/1976
11	0.00	0.13/1985
12	0.01	0.05/1976
13	0.01	T/2015*
14	0.00	0.01/2015*
15	0.01	0.00/2014*
16	0.01	0.01/1959
17	0.00	0.06/1999
18	0.01	0.24/1975
19	0.01	0.21/1989
20	0.00	0.50/1988
21	0.01	0.16/2007
22	0.01	0.15/1990
23	0.01	0.09/1955
24	0.01	0.73/1982
25	0.00	0.14/1943
26	0.01	0.39/1962
27	0.01	T/1956*
28	0.01	1.25/1994
29	0.01	0.31/1976
30	0.01	0.12/1983

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

October

Period of Record: 1943-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.01	0.39/1946
2	0.01	0.16/1974
3	0.01	0.20/1972
4	0.01	0.92/2010
5	0.01	0.74/2011
6	0.01	1.29/1945
7	0.00	0.46/1945
8	0.01	0.10/1945
9	0.01	0.13/2013
10	0.01	0.15/2006
11	0.01	0.45/2012
12	0.01	0.25/2000
13	0.00	1.58/2009
14	0.01	0.62/1945
15	0.01	0.44/2015
16	0.01	0.10/2015
17	0.01	0.03/1963
18	0.01	0.16/2010
19	0.01	1.21/2004
20	0.01	0.88/1957
21	0.00	0.17/1957
22	0.01	T/2012*
23	0.01	0.09/1953
24	0.01	0.01/1971*
25	0.02	0.23/2005
26	0.01	0.69/1991
27	0.01	0.21/1950
28	0.01	0.30/1974
29	0.01	0.30/1996*
30	0.02	0.53/1992
31	0.01	0.14/1996

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

November

Period of Record: 1943-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.02	0.14/2008
2	0.01	0.16/1957
3	0.01	0.89/1960
4	0.02	0.73/1987
5	0.01	0.89/1960
6	0.02	0.17/1987
7	0.01	0.62/2004
8	0.02	1.30/2002
9	0.01	0.60/1949
10	0.02	0.99/1949
11	0.02	0.36/1944
12	0.02	0.74/1973
13	0.01	0.24/1984
14	0.02	0.94/1981
15	0.02	0.78/1954
16	0.02	0.35/1965
17	0.02	1.08/1973
18	0.02	0.51/1950
19	0.02	1.28/1950
20	0.02	0.85/1951
21	0.01	0.33/1996
22	0.02	0.93/1984
23	0.02	0.72/1946
24	0.02	0.95/1983
25	0.02	0.89/1970
26	0.02	0.40/2008
27	0.01	0.40/1984
28	0.02	0.16/1981
29	0.02	0.52/1985
30	0.02	0.67/1982

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

December

Period of Record: 1943-Present

Normals: 1981-2010

Date	Normal Precipitation	Record Precipitation
1	0.02	0.33/2005
2	0.01	1.28/1966
3	0.02	0.76/1954
4	0.02	0.59/1980
5	0.02	2.08/1966
6	0.02	2.28/1966
7	0.02	0.65/1992
8	0.02	0.06/1991
9	0.02	0.19/1954
10	0.02	0.14/1984
11	0.02	0.37/1945
12	0.03	1.04/2009
13	0.02	0.23/2012
14	0.02	0.01/2008
15	0.02	0.80/1957
16	0.02	0.75/1957
17	0.03	1.54/1977
18	0.02	1.10/2010
19	0.03	3.32/2010
20	0.02	0.51/2010
21	0.03	0.59/1945
22	0.03	2.67/1982
23	0.04	2.33/1955
24	0.03	0.84/1955
25	0.03	0.38/2008
26	0.04	0.21/2005
27	0.03	0.49/1977
28	0.04	0.29/2004
29	0.04	2.08/1965
30	0.03	1.07/1951
31	0.04	1.34/2004

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

Bishop Precipitation Records

Maximum 24 Hour Precipitation

Month	Amount/Date
January	4.00 / January 4, 2008
February	3.64 / February 24-25, 1969
March	1.79 / March 10-11, 1995
April	1.58 / April 11, 1982
May	0.95 / May 15, 1953
June	0.72 / June 18-19, 1982
July	0.86 / July 15-16, 1976
August	0.46 / August 16-17, 1977
September	1.25 / September 28, 1994
October	1.77 / October 13-14, 2009
November	1.79 / November 18-19, 1950
December	3.37 / December 18-19, 2010
Annual	4.00 / January 4, 2008

Wettest Calendar Days Ever

1. 4.00 inches / January 4, 2008
2. 3.50 inches / February 24, 1969
3. 3.32 inches / December 19, 2010
3. 3.32 inches / January 15, 1952
5. 2.67 inches / December 22, 1982
6. 2.62 inches / February 2, 1945
7. 2.36 inches / February 1, 1945
8. 2.33 inches / January 2, 2006
8. 2.33 inches / January 25, 1969
8. 2.33 inches / December 23, 1955

Wettest and Driest Months, Years and Seasons

Listed below are the normal precipitation by month, year and season based on the period from 1981 through 2010 and the ten wettest and driest for each.

January

Normal Precipitation: 1.05	
Wettest Januaries	Driest Januaries
1. 8.93 / 1969	1. 0.00 / 1976
2. 5.03 / 1952	1. 0.00 / 1966
3. 4.82 / 2008	1. 0.00 / 1948
4. 3.78 / 2005	1. 0.00 / 1945
5. 3.22 / 1963	5. Trace / 2013
6. 3.02 / 1973	5. Trace / 1991
7. 3.01 / 2006	5. Trace / 1984
8. 2.87 / 1995	5. Trace / 1975
9. 2.68 / 1978	5. Trace / 1972
10. 2.26 / 1997	5. Trace / 1947

February

Normal Precipitation: 0.85	
Wettest Februaries	Driest Februaries
1. 6.01 / 1969	1. 0.00 / 1974
2. 5.50 / 1945	1. 0.00 / 1972
3. 5.16 / 1998	3. Trace / 2013
4. 4.96 / 1962	3. Trace / 2002
5. 3.33 / 1978	3. Trace / 1997
6. 3.04 / 1986	3. Trace / 1967
7. 2.72 / 1980	3. Trace / 1964
8. 2.53 / 1959	3. Trace / 1961
9. 2.21 / 1954	3. Trace / 1956
10. 1.99 / 1944	3. Trace / 1953
	3. Trace / 1952
	3. Trace / 1948

March

Normal Precipitation: 0.53	
Wettest Marches	Driest Marches
1. 2.94 / 1991	1. 0.00 / 2008
2. 2.28 / 1995	1. 0.00 / 1997
3. 2.05 / 1952	1. 0.00 / 1990
4. 1.75 / 1974	1. 0.00 / 1972
5. 1.64 / 1978	1. 0.00 / 1956
6. 1.46 / 1958	6. Trace / 2013
7. 1.24 / 1946	6. Trace / 1966
8. 1.23 / 2005	6. Trace / 1955
9. 1.20 / 1983	6. Trace / 1951
10. 1.00 / 2011	10. 0.01 / 2015
10. 1.00 / 1986	10. 0.01 / 2002
10. 1.00 / 1954	10. 0.01 / 1999

April

Normal Precipitation: 0.26	
Wettest Aprils	Driest Aprils
1. 2.26 / 1956	1. 0.00 / 2008
2. 1.62 / 1982	1. 0.00 / 1997
3. 1.30 / 1958	1. 0.00 / 1993
4. 1.02 / 1952	1. 0.00 / 1992
5. 0.68 / 1981	1. 0.00 / 1989
6. 0.65 / 1986	1. 0.00 / 1985
7. 0.63 / 1988	1. 0.00 / 1973
8. 0.56 / 1990	1. 0.00 / 1962
8. 0.56 / 1948	9. Trace / 2013
10. 0.49 / 1965	9. Trace / 2005
10. 0.49 / 1964	9. Trace / 1979
	9. Trace / 1972
	9. Trace / 1966
	9. Trace / 1961
	9. Trace / 1954

May

Normal Precipitation: 0.19	
Wettest Mays	Driest Mays
1. 1.39 / 2015	1. 0.00 / 2007
2. 1.30 / 1962	1. 0.00 / 2002
3. 1.17 / 1953	1. 0.00 / 1985
4. 1.04 / 1989	1. 0.00 / 1983
4. 1.04 / 1971	1. 0.00 / 1978
6. 0.88 / 1981	6. Trace / 2012
6. 0.88 / 1955	6. Trace / 2010
8. 0.81 / 1964	6. Trace / 2004
9. 0.74 / 1949	6. Trace / 2003
10. 0.72 / 1995	6. Trace / 2000
	6. Trace / 1991
	6. Trace / 1986
	6. Trace / 1984
	6. Trace / 1979
	6. Trace / 1975
	6. Trace / 1970
	6. Trace / 1952
	6. Trace / 1950

June

Normal Precipitation: 0.19	
Wettest Junes	Driest Junes
1. 1.31 / 1998	1. 0.00 / 2012
2. 1.29 / 1982	1. 0.00 / 2010
3. 0.67 / 1985	1. 0.00 / 2008
4. 0.61 / 1977	1. 0.00 / 2005
5. 0.58 / 2009	1. 0.00 / 1996
6. 0.55 / 1963	1. 0.00 / 1994
7. 0.47 / 1997	1. 0.00 / 1993
8. 0.43 / 1948	1. 0.00 / 1986
9. 0.39 / 2015	1. 0.00 / 1981
10. 0.36 / 1969	1. 0.00 / 1974
	1. 0.00 / 1971
	1. 0.00 / 1956
	1. 0.00 / 1955
	1. 0.00 / 1946

July

Normal Precipitation: 0.17	
Wettest Julys	Driest Julys
1. 1.47 / 1976	1. 0.00 / 1994
2. 1.04 / 1984	1. 0.00 / 1993
3. 0.73 / 2001	1. 0.00 / 1991
4. 0.70 / 1968	1. 0.00 / 1989
5. 0.62 / 1967	1. 0.00 / 1982
6. 0.59 / 1965	1. 0.00 / 1981
6. 0.59 / 1946	1. 0.00 / 1973
8. 0.48 / 2013	1. 0.00 / 1963
9. 0.44 / 2007	1. 0.00 / 1948
10. 0.35 / 1980	1. 0.00 / 1944

August

Normal Precipitation: 0.13	
Wettest Augusts	Driest Augusts
1. 0.64 / 1983	1. 0.00 / 2008
2. 0.61 / 1965	1. 0.00 / 2006
2. 0.61 / 1963	1. 0.00 / 1994
4. 0.58 / 2005	1. 0.00 / 1991
4. 0.58 / 1984	1. 0.00 / 1985
6. 0.51 / 1982	1. 0.00 / 1980
6. 0.51 / 1977	1. 0.00 / 1957
8. 0.45 / 1990	1. 0.00 / 1956
9. 0.39 / 1968	1. 0.00 / 1954
10. 0.30 / 2000	1. 0.00 / 1944

September

Normal Precipitation: 0.19	
Wettest Septembers	Driest Septembers
1. 1.28 / 1994	1. 0.00 / 2012
2. 1.18 / 1975	1. 0.00 / 2010
3. 0.94 / 1976	1. 0.00 / 2006
4. 0.74 / 1982	1. 0.00 / 2001
5. 0.53 / 1950	1. 0.00 / 1993
6. 0.51 / 1978	1. 0.00 / 1974
7. 0.50 / 1988	1. 0.00 / 1973
8. 0.46 / 1962	1. 0.00 / 1970
9. 0.40 / 1983	1. 0.00 / 1968
10. 0.38 / 1963	1. 0.00 / 1964
	1. 0.00 / 1948
	1. 0.00 / 1946

October

Normal Precipitation: 0.30	
Wettest Octobers	Driest Octobers
1. 2.93 / 1945	1. 0.00 / 2003
2. 1.77 / 2009	1. 0.00 / 1999
3. 1.58 / 1957	1. 0.00 / 1990
4. 1.33 / 2010	1. 0.00 / 1989
5. 1.26 / 2004	1. 0.00 / 1988
6. 0.90 / 1972	1. 0.00 / 1986
7. 0.80 / 1974	1. 0.00 / 1973
8. 0.77 / 1996	1. 0.00 / 1970
9. 0.75 / 2015	1. 0.00 / 1967
10. 0.74/2011	1. 0.00 / 1966
	1. 0.00 / 1965
	1. 0.00 / 1961
	1. 0.00 / 1959
	1. 0.00 / 1954
	1. 0.00 / 1952

November

Normal Precipitation: 0.52	
Wettest Novembers	Driest Novembers
1. 2.59 / 1960	1. 0.00 / 2006
2. 2.18 / 1984	1. 0.00 / 2000
3. 1.97 / 1984	1. 0.00 / 1992
4. 1.94 / 1973	1. 0.00 / 1991
5. 1.90 / 1965	1. 0.00 / 1990
6. 1.81 / 1950	1. 0.00 / 1976
7. 1.68 / 2002	1. 0.00 / 1962
8. 1.67 / 1987	1. 0.00 / 1959
9. 1.64 / 1970	1. 0.00 / 1956
10. 1.59 / 1949	1. 0.00 / 1948

December

Normal Precipitation: 0.80	
Wettest Decembers	Driest Decembers
1. 5.79 / 1966	1. 0.00 / 2000
2. 5.37 / 2010	1. 0.00 / 1999
3. 4.20 / 1951	1. 0.00 / 1990
4. 4.02 / 1955	1. 0.00 / 1989
5. 2.89 / 1945	1. 0.00 / 1975
6. 2.67 / 1982	1. 0.00 / 1962
7. 2.53 / 1977	1. 0.00 / 1958
8. 2.16 / 2005	8. Trace / 2011
8. 2.16 / 1965	8. Trace / 1976
10. 1.85 / 1971	10. 0.01 / 1972

Calendar Years

Normal Precipitation: 5.18	
Wettest Years	Driest Years
1. 17.09 / 1969	1. 0.80 / 1947
2. 13.05 / 1945	2. 1.33 / 2013
3. 10.41 / 1982	3. 1.81 / 1989
4. 10.10 / 1952	4. 1.82 / 1968
5. 9.62 / 1978	5. 1.92 / 2007
6. 9.49 / 2005	6. 1.95 / 1948
7. 9.28 / 1998	7. 2.24 / 1961
8. 9.14 / 2010	8. 2.40 / 1999
9. 8.15 / 1983	9. 2.44 / 1972
10. 8.06 / 1995	10. 2.46 / 2003

Wettest Months

Wettest Months
1. 8.93 / January 1969
2. 6.01 / February 1969
3. 5.79 / December 1966
4. 5.50 / February 1945
5. 5.37 / December 2010
6. 5.16 / February 1998
7. 5.03 / January 1952
8. 4.96 / February 1962
9. 4.82 / January 2008
10. 4.20 / December 1951

Water Years (July - June)

Wettest Years	Driest Years
1. 18.02 / 1968-1969	1. 1.50 / 1959-1960
2. 13.52 / 1951-1952	2. 1.51 / 2006-2007
3. 10.98 / 1977-1978	3. 1.55 / 1947-1948
4. 10.31 / 2004-2005	4. 1.89 / 1967-1968
5. 10.00 / 1982-1983	5. 1.95 / 2012-2013
6. 9.92 / 1997-1998	6. 2.04 / 2001-2002
7. 9.13 / 2010-2011	7. 2.10 / 1986-1987
8. 9.00 / 1961-1962	8. 2.16 / 1964-1965
9. 8.97 / 1966-1967	9. 2.42 / 1999-2000
10. 8.56 / 1994-1995	10. 2.51 / 1969-1970
10. 8.56 / 1955-1956	

Monsoon Season (June 15th – September 30th)

Wettest Monsoon Seasons	Driest Monsoon Seasons
1. 2.54 / 1982	1. Trace / 2003
2. 2.41 / 1976	1. Trace / 1993
3. 1.66 / 1984	1. Trace / 1947
4. 1.34 / 1975	4. 0.03 / 1944
5. 1.28 / 1994	5. 0.04 / 1970
6. 1.22 / 1965	6. 0.05 / 1964
7. 1.09 / 1983	6. 0.05 / 1956
7. 1.09 / 1968	8. 0.06 / 2002
9. 0.99 / 1990	8. 0.06 / 1957
9. 0.99 / 1963	10. 0.07 / 1981

Meteorological Winter (December – February)

Wettest Winters	Driest Winters
1. 15.42 / 1968-1969	1. 0.07 / 1990-1991
2. 9.23 / 1951-1952	2. 0.12 / 1947-1948
3. 8.54 / 1977-1978	3. 0.24 / 2001-2002
4. 7.43 / 1966-1967	4. 0.25 / 1960-1961
5. 6.43 / 2007-2008	5. 0.34 / 1970-1971
6. 6.41 / 2004-2005	6. 0.52 / 2006-2007
7. 6.33 / 2010-2011	6. 0.52 / 1963-1964
8. 6.27 / 1961-1962	8. 0.56 / 1967-1968
9. 6.19 / 1997-1998	9. 0.72 / 2014-2015
10. 6.15 / 1992-1993	10. 0.74 / 1964-1965

Meteorological Spring (March - May)

Wettest Springs	Driest Springs
1. 3.07 / 1995	1. 0.01 / 1997
1. 3.07 / 1952	2. 0.05 / 2002
3. 3.01 / 1991	2. 0.05 / 1960
4. 2.84 / 1958	4. 0.06 / 1985
5. 2.60 / 1956	5. 0.11 / 1984
6. 2.41 / 1981	5. 0.11 / 1972
7. 2.29 / 1974	7. 0.12 / 1968
8. 2.20 / 1982	8. 0.13 / 1961
9. 1.86 / 1978	9. 0.15 / 2008
10. 1.70 / 1998	10. 0.18 / 2009
	10. 0.18 / 1966

Meteorological Summer (June - August)

Wettest Summers	Driest Summers
1. 1.80 / 1982	1. 0.00 / 1994
2. 1.66 / 1984	2. Trace / 2003
3. 1.64 / 1976	2. Trace / 1993
4. 1.42 / 1965	4. 0.01 / 1957
5. 1.35 / 1998	5. 0.02 / 1991
6. 1.16 / 1963	5. 0.02 / 1947
7. 1.12 / 1977	7. 0.03 / 1944
8. 1.09 / 1968	8. 0.04 / 1981
9. 0.98 / 1985	9. 0.05 / 2002
10. 0.88 / 2015	9. 0.05 / 1989
	9. 0.05 / 1979
	9. 0.05 / 1978
	9. 0.05 / 1964
	9. 0.05 / 1956

Meteorological Fall (September - November)

Wettest Falls	Driest Falls
1. 3.22 / 1945	1. 0.02 / 1995
2. 2.81 / 1960	2. 0.05 / 1977
3. 2.61 / 1946	3. 0.06 / 1971
4. 2.55 / 1950	4. 0.07 / 1947
5. 2.39 / 2004	5. 0.09 / 1968
6. 2.29 / 1982	6. 0.14 / 1943
7. 2.13 / 1984	7. 0.15 / 1986
8. 1.95 / 1957	8. 0.16 / 2014
9. 1.94 / 1973	9. 0.17 / 1999
9. 1.94 / 1972	10. 0.18 / 1993
	10. 0.18 / 1969

Total Monthly and Annual Precipitation at Bishop

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
1943	-	-	-	-	-	-	-	-	0.14	T	T	0.53	-
1944	0.34	1.99	0.24	0.20	0.05	0.03	0.00	0.00	T	0.04	0.51	0.09	3.49
1945	0.00	5.50	0.74	0.02	0.35	0.04	0.07	0.22	0.18	2.93	0.11	2.89	13.05
1946	0.02	0.18	1.24	0.15	0.08	0.00	0.59	0.01	0.00	0.43	2.18	0.87	5.75
1947	T	0.19	0.05	0.33	0.02	0.02	T	T	T	0.05	0.02	0.12	0.80
1948	0.00	T	0.05	0.56	0.32	0.43	0.00	T	0.00	0.23	0.00	0.36	1.95
1949	0.73	0.55	0.29	0.02	0.74	T	0.05	0.05	T	T	1.59	0.06	4.08
1950	0.42	0.65	0.43	0.10	T	T	0.23	0.02	0.53	0.21	1.81	0.85	5.25
1951	0.25	0.05	T	0.33	0.08	0.33	0.07	0.01	T	0.24	0.87	4.20	6.43
1952	5.03	T	2.05	1.02	T	0.03	0.20	T	0.09	0.00	0.53	1.15	10.10
1953	0.11	T	0.27	0.15	1.17	0.03	0.19	0.03	T	0.12	0.38	0.13	2.58
1954	1.68	2.21	1.00	T	0.18	0.02	0.16	0.00	0.14	0.00	0.85	0.95	7.19
1955	1.81	0.19	T	0.41	0.88	0.00	0.04	0.22	0.14	T	0.09	4.02	7.80
1956	1.45	T	0.00	2.26	0.34	0.00	0.05	0.00	T	0.46	0.00	0.05	4.61
1957	1.61	0.57	0.07	0.41	0.47	T	0.01	0.00	0.05	1.58	0.32	1.60	6.69
1958	0.58	0.77	1.46	1.30	0.08	0.14	T	0.02	0.10	0.03	0.28	0.00	4.76
1959	0.77	2.53	0.02	0.01	0.18	0.01	0.05	0.01	0.28	0.00	0.00	0.12	3.98
1960	0.18	0.81	0.03	0.01	0.01	T	0.19	T	0.05	0.17	2.59	0.08	4.12
1961	0.17	T	0.11	T	0.02	0.16	0.12	0.28	T	0.00	0.56	0.82	2.24
1962	0.49	4.96	0.30	0.00	1.30	0.17	0.06	T	0.46	T	0.00	0.00	7.74
1963	3.22	0.63	0.60	0.33	0.25	0.55	0.00	0.61	0.38	0.08	0.15	0.03	6.83
1964	0.49	T	0.03	0.49	0.81	T	T	0.05	0.00	0.37	0.22	0.24	2.70
1965	0.48	0.02	0.05	0.49	0.02	0.22	0.59	0.61	0.02	0.00	1.90	2.16	6.56
1966	0.00	0.01	T	T	0.18	T	T	0.10	0.18	0.00	0.27	5.79	6.53
1967	1.64	T	0.50	0.47	0.02	T	0.62	0.03	0.26	0.00	0.30	0.52	4.36
1968	0.01	0.03	0.10	0.01	0.01	T	0.70	0.39	0.00	0.08	0.01	0.48	1.82
1969	8.93	6.01	0.68	0.11	0.27	0.36	0.31	0.04	T	0.02	0.16	0.20	17.09
1970	0.71	0.54	0.05	0.44	T	0.04	0.03	0.01	0.00	0.00	1.64	0.22	3.68
1971	0.01	0.11	0.27	0.06	1.04	0.00	0.14	0.13	0.01	0.01	0.04	1.85	3.67
1972	T	0.00	0.00	T	0.11	0.25	0.04	0.09	0.36	0.90	0.68	0.01	2.44
1973	3.02	1.59	0.32	0.00	0.09	0.14	0.00	0.01	0.00	0.00	1.94	0.60	7.71
1974	1.48	0.00	1.75	0.21	0.33	0.00	0.16	T	0.00	0.80	T	0.64	5.37
1975	T	0.20	0.69	0.20	T	0.07	T	0.10	1.18	0.09	0.02	0.00	2.55
1976	0.00	1.37	0.05	0.05	0.59	0.17	1.47	T	0.94	0.02	0.00	T	4.66
1977	0.77	0.22	0.04	0.02	0.60	0.61	T	0.51	T	T	0.05	2.53	5.35
1978	2.68	3.33	1.64	0.22	0.00	0.02	0.02	0.01	0.51	0.18	0.51	0.50	9.62
1979	0.45	0.64	0.49	T	T	T	0.03	0.02	0.25	0.07	0.13	0.57	2.65
1980	1.56	2.72	0.28	0.43	0.10	T	0.35	0.00	0.14	T	0.08	1.25	6.91
1981	0.65	0.11	0.85	0.68	0.88	0.00	0.00	0.04	0.03	0.09	1.30	0.11	4.74
1982	1.43	0.02	0.50	1.62	0.08	1.29	0.00	0.51	0.74	0.68	0.87	2.67	10.41
1983	1.82	1.29	1.20	0.22	0.00	T	0.05	0.64	0.40	0.08	1.31	1.14	8.15
1984	T	0.36	0.09	0.02	T	0.04	1.04	0.58	T	0.16	1.97	0.85	5.11
1985	0.25	0.01	0.06	0.00	0.00	0.67	0.31	0.00	0.34	0.05	0.95	0.55	3.19
1986	0.86	3.04	1.00	0.65	T	0.00	0.31	0.06	0.12	0.00	0.03	0.08	6.15
1987	0.42	0.31	0.03	0.04	0.54	0.16	0.18	0.03	0.01	0.13	1.67	0.60	4.12
1988	0.87	0.30	0.07	0.63	0.12	0.23	T	T	0.50	0.00	0.12	0.68	3.52
1989	0.06	0.12	0.04	0.00	1.04	0.04	0.00	0.01	0.24	0.00	0.26	0.00	1.81
1990	0.95	0.50	0.00	0.56	0.21	0.15	0.26	0.45	0.28	0.00	0.00	0.00	3.36
1991	T	0.07	2.94	0.07	T	0.02	0.00	0.00	0.21	0.69	0.00	0.58	4.58
1992	0.38	1.31	0.67	0.00	0.06	0.30	0.12	0.06	0.05	0.53	0.00	1.50	4.98

1993	2.03	2.62	0.91	0.00	0.04	0.00	0.00	T	0.00	0.06	0.12	0.08	5.86
1994	0.04	1.33	0.57	0.03	0.54	0.00	0.00	0.00	1.28	0.24	0.05	0.25	4.33
1995	2.87	0.60	2.28	0.07	0.72	0.20	0.23	0.01	T	T	0.02	1.06	8.06
1996	0.38	0.30	0.79	0.28	0.02	0.00	0.12	T	T	0.77	0.78	0.39	3.83
1997	2.26	T	0.00	0.00	0.01	0.47	0.23	T	0.24	T	0.25	0.48	3.94
1998	0.55	5.16	0.85	0.28	0.57	1.31	0.01	0.03	0.28	0.17	0.01	0.06	9.28
1999	1.10	0.41	0.01	0.38	0.08	0.02	0.04	0.19	0.15	0.00	0.02	0.00	2.40
2000	0.30	0.98	0.29	0.45	T	T	T	0.30	0.02	0.25	0.00	0.00	2.59
2001	0.79	1.40	0.37	0.41	0.12	T	0.73	T	0.00	T	1.02	0.21	5.05
2002	0.03	T	0.01	0.04	0.00	T	0.05	T	0.01	T	1.68	0.86	2.68
2003	0.04	0.46	0.57	0.21	T	T	T	T	T	0.00	0.88	0.30	2.46
2004	0.03	1.34	0.10	0.10	T	0.07	0.02	0.01	T	1.26	1.13	1.80	5.86
2005	3.78	0.83	1.23	T	0.25	0.00	0.02	0.58	0.36	0.28	T	2.16	9.49
2006	3.01	0.79	0.18	0.39	0.08	0.06	0.26	0.00	0.00	0.52	0.00	0.05	5.34
2007	0.35	0.12	0.03	0.17	0.00	0.01	0.44	0.17	0.22	0.01	0.03	0.37	1.92
2008	4.82	1.24	0.00	0.00	0.15	0.00	0.15	0.00	0.08	T	0.70	0.61	7.75
2009	0.03	0.53	0.04	0.02	0.12	0.58	0.11	0.12	0.01	1.77	0.07	1.30	4.70
2010	1.28	0.39	0.02	0.39	T	0.00	0.08	T	0.00	1.33	0.28	5.37	9.14
2011	0.02	0.94	1.00	0.04	0.06	0.01	0.08	T	0.16	0.74	0.14	T	3.19
2012	1.43	0.05	0.29	0.23	T	0.00	T	0.25	0.00	0.42	0.04	0.77	3.48
2013	T	T	T	T	0.47	T	0.48	0.16	T	0.16	0.03	0.03	1.33
2014	0.20	1.71	0.04	0.07	0.24	0.00	0.15	0.20	0.16	T	T	0.46	3.23
2015	0.09	0.17	0.01	0.01	1.39	0.39	0.47	0.02	0.01	0.75	T	0.06	3.37

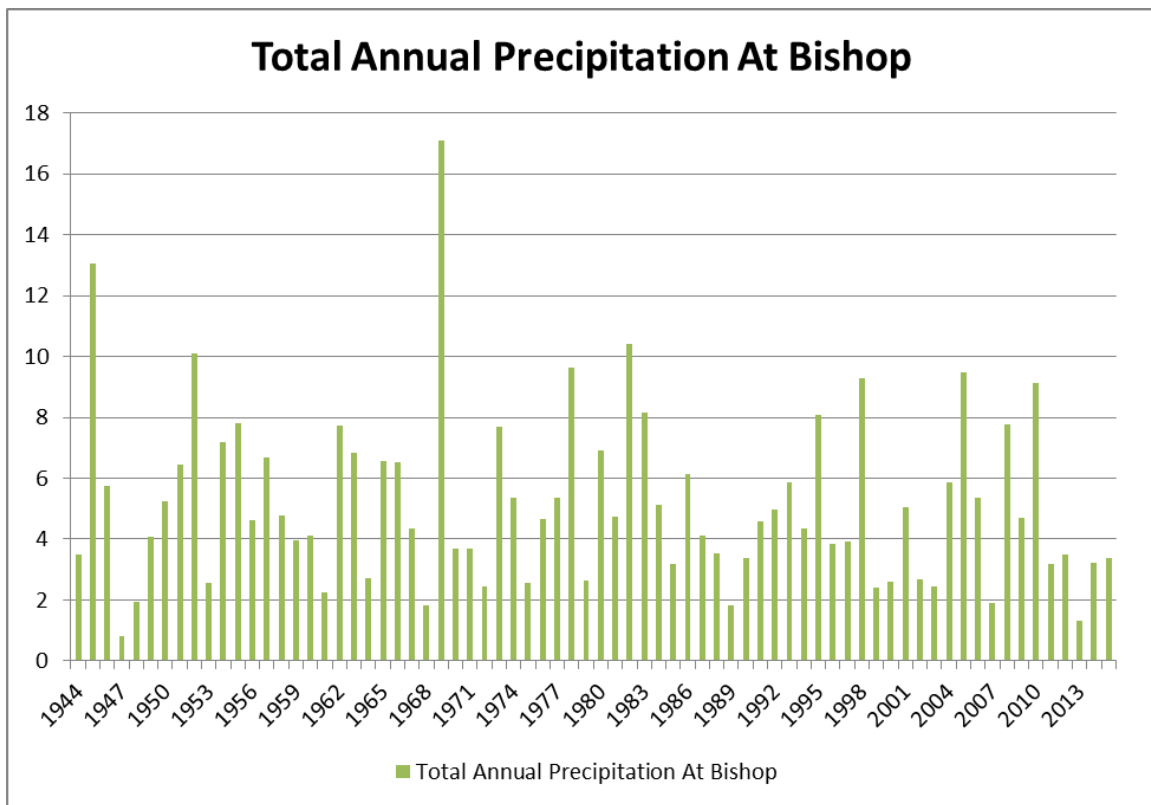


Figure 16 – Total Annual Precipitation At Bishop.

Number of Days (Precipitation) at Bishop

With A Trace or More

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	14 1995	15 2005	12 1991	10 1951	15 2015	12 2009	14 2015	12 2012	12 1950	14 2005	10 1965	14 2010	70 1995, 1998 &2005
Normal	6	6	5	3	4	3	3	3	2	3	3	4	44

Normals above are based on the period from 1981-2010.

With 0.01 inch or More

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	11 1969 &2005	11 1998	10 1991	7 1957	10 1949	8 1977	8 1974	9 1983	7 1976	9 1957	8 1965	11 1951	49 1983
Normal	3.9	4.0	2.9	1.9	1.7	1.5	1.7	1.5	1.7	1.5	2.3	3.0	27.6

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

With 0.10 inch or More

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	7 1993 &2005	8 1969 &1998	7 1991	4 1956	5 1962	3 1998	3 1965, 1976 &1984	3 1965, 1983 &2005	4 1975	6 1945	6 1965 &1987	7 1951	26 1983
Normal	2.0	1.9	1.3	0.7	0.7	0.5	0.6	0.5	0.6	0.7	1.3	1.5	12.3

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

With 0.50 inch or More

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	5 1969	4 1998	2 1978	3 1956	2 2015	2 1982 &1998	1 1946 &1976	0 2015^	1 1994^	2 1945	3 1946 &1960	4 1945	9 1969
Normal	0.6	0.5	0.2	0.1	0.1	0.1	0	0	0.1	0.2	0.4	0.4	2.7

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

*Happened once in a 30 year period.

^And in previous years.

With 1.00 inch or More

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Greatest	5 1969	2 1945, 1962 &1998	1 2005^	1 1982	0 2015^	0 2015^	0 2015^	0 2015^	1 1994	1 1945, 2004 &2009	1 2002^	3 1966	6 1969
Normal	0.1	0.1	0.1	*	0	0	0	0	*	0	*	0.2	0.6

Normals above are based on the period from 1981-2010 and are calculated by NCEI.

*Happened once in a 30 year period.

^And in previous years.

Consecutive Days Records For Precipitation

<u>Consecutive Days With A Trace or More</u>
11 days from February 15, 2005 through February 25, 2005
9 days from January 18, 1969 through January 26, 1969
9 days from August 9, 1965 through August 17, 1965
8 days from February 14, 1980 through February 21, 1980
8 days from January 17, 1949 through January 24, 1949

<u>Consecutive Days With Measurable Precipitation (0.01 or More)</u>
9 days from January 18, 1969 through January 26, 1969
8 days from February 14, 1980 through February 21, 1980
7 days from January 12, 1993 through January 18, 1993
7 days from April 17, 1957 through April 23, 1957

<u>Consecutive Dry Days</u>
116 days from May 26, 1994 through September 18, 1994
103 days from October 18, 1962 through January 28, 1963
102 days from September 24, 1990 through January 3, 1991
90 days from June 22, 1944 through September 19, 1944
89 days from October 3, 1976 through December 30, 1976

<u>Consecutive Days Without Measurable Precipitation</u>
199 days from April 23, 2003 through November 7, 2003
156 days from September 24, 1990 through February 24, 1991
147 days from May 17, 1993 through October 10, 1993
136 days from July 11, 2001 through November 23, 2001
130 days from December 27, 2012 through May 5, 2013
130 days from December 28, 1971 through May 5, 1972

Bishop Snow Records

Snowfall measurements are typically taken every six hours. However, due to Bishop not being fully staffed twenty four hours a day, snowfall measurements were taken at varied times through the period of record. The periods listed were noted on the original WS Form 1009 or the published Local Climatological Data publications (LCDs): September 1, 1943 – February 28, 1947 at 1:30 AM and adjusted to calendar date, March 1, 1947 through April 30, 1947 at 10:30 PM, May 1, 1947 – January 14, 1949 at Midnight, January 15, 1949 through January 27, 1954 at 4:30 PM. After January 27, 1954, comparisons with a weighing rain gauge and “other sources” were used to adjust totals as best as possible to a calendar day.

Monthly Normals and Records

Month	Normal	Record Lowest Total	Record Highest Total
January	5.2	0.0"/2015*	30.1"/2005
February	0.7	0.0"/2015*	31.9"/1969
March	0.5	0.0"/2014*	14.5"/1952
April	0.1	0.0"/2015*	8.8"/1956
May	Trace	0.0"/2014*	2.3"/1964
June	0.0	0.0"	0.0"
July	0.0	0.0"	0.0"
August	0.0	0.0"	0.0"
September	0.0	0.0"/2015*	T/1955
October	0.0	0.0"/2015*	1.8"/1978
November	0.3	0.0"/2015*	3.9"/1964
December	1.2	0.0"/2014*	13.2"/1967^

Normals are based on the period from 1981-2010.

*Also in earlier years.

^ Unofficially 14.0" of snow was measured at the Bishop Airport on December 24, 1988, however, since the office was closed this amount is not considered an official amount. This amount was obtained from a remark on the SWO form.

Earliest and Latest Snow On Record*

*Does not include hail, sleet or ice pellets.

Earliest occurrence of snow: October 11, 2008

Earliest measurable snow: 0.2" on October 20, 1957

Latest measurable snow: 0.4" on May 11, 1980

Latest occurrence of snow: May 19, 1974

Bishop Snow Records (Continued)

Consecutive Days With Snow (Trace or More)

8 days from January 17-24, 1949

Consecutive Days With Snow (Measurable)

4 days from January 13 - January 16, 1993

4 days from February 22 – 25, 1969

4 days from January 17-20, 1949

Greatest Daily Snowfall

16.2" on January 2, 2006

12.5" on January 24, 1969

12.1" on February 2, 1976

12.0" on January 7, 2005

12.0" on January 3, 2005

10.5" on January 25, 1969

9.1" on January 5, 1982

9.0" on January 7, 1995

9.0" on January 15, 1952

8.6" on January 20, 1982

Biggest Snowstorms (10 inches or more)

23.1" January 23-25, 1969

21.0" February 5-7, 1976

18.1" January 2-4, 2005

18.0" January 1-2, 2006

17.0" February 19-22, 1944

16.2" February 23-25, 1969

14.0" December 24, 1988*

13.1" February 11-13, 2001

12.1" January 4-5, 1982

12.0" January 7, 2005

12.0" January 24-26, 1999

10.5" March 14-16, 1952

10.3" January 13-16, 1993

* Unofficial total obtained from daily SWO form. Was measured at the Bishop Airport, however, since the office was closed this amount is not considered an official amount.

Bishop Snow Records (Continued)

Snowiest Months

31.9"/February 1969
30.1"/January 2005
23.2"/January 1969
21.0"/February 1976
20.7"/January 1982
20.0"/January 1955
18.4"/January 2006
17.0"/February 1944
15.8"/January 1993
14.5"/March 1952

Snowiest Seasons

59.3" 1968-1969
36.3" 2004-2005
32.5" 1951-1952
27.6" 1981-1982
25.1" 1992-1993
21.9" 2005-2006
21.5" 1975-1976
21.5" 1954-1955
20.0" 1943-1944
16.4" 1973-1974

Least Snowiest Seasons

Trace 2014-2015
Trace 2003-2004
Trace 1999-2000
Trace 1974-1975
Trace 1965-1966
Trace 1960-1961
Trace 1956-1957
Trace 1953-1954
0.1" 1989-1990
0.2" 2002-2003
0.6" 2013-2014
1.0" 1996-1997
1.0" 1983-1984
1.0" 1959-1960
1.0" 1952-1953

Bishop Snow Records (Continued)

Greatest Snow Depths*

22" on January 25, 1969
14" on February 7, 1976
13" on January 8, 1995
13" on January 7, 1995
13" on March 1, 1969
13" on February 22, 1944
12" on January 5, 1982
12" on February 8, 1976
12" on February 9, 1969
12" on February 8, 1969
12" on February 7, 1969
12" on January 26, 1969

Consecutive Days With Snow On The Ground*

Measurable – 54 days from January 24, 1969 through March 18, 1969
Trace or More - 59 days from January 22, 1969 through March 21, 1969

* Snow depth observation time has varied through the period of record. The time used here was based on that listed in the original WS Form 1009 or the published Local Climatological Data (LCD) for Bishop. The times are as follows: September 1, 1943 – February 28, 1947 at 1:30 AM, March 1, 1947 through April 30, 1947 at 10:30 PM, May 1, 1947 – January 14, 1949 at Midnight, January 15, 1949 through May 31, 1955 at 10:30 AM, June 1, 1955 through July 31, 1957 at 6:10 AM, August 1, 1957 through December 31, 1964 at 5:50 AM, January 1, 1965 through December 31, 1983 at 6:00 AM, January 1, 1984 through April 30, 1995 at 8:00 AM and May 1, 1995 through the present at 4:00 AM during Standard Time and 5:00 AM during Daylight time.

Bishop Daily Snowfall Records

Date	October	November	December	January	February	March	April	May
1	0.0/2015*	0.0/2015*	T/1973	7.0/1955	2.2/1998	T/2015*	1.7/1998	0.0/2015*
2	0.0/2015*	0.5/1957	1.3/1985	<u>16.2/2006</u>	T/1985*	2.9/1981	1.3/1967	0.0/2015*
3	0.0/2015*	T/1957	3.0/1951	12.0/2005	2.0/1946	1.1/1974	1.0/1958	0.0/2015*
4	0.0/2015*	T/1957	T/1953*	6.0/2005	0.1/1994	T/1949*	T/1955	2.3/1964
5	0.0/2015*	T/1977*	1.1/1997	9.1/1982	5.5/1976	T/2000	T/2010	0.4/1988
6	0.0/2015*	0.0/2015*	1.3/1997	5.1/1974	12.1/1976	0.1/1998	T/1999	T/1965*
7	0.0/2015*	0.0/2015*	0.5/2013	12.0/2005	3.4/1976	3.0/1952	0.1/1999	T/1965*
8	0.0/2015*	0.0/2015*	1.0/1947	2.7/1973	0.3/1978	1.0/1952	0.2/2011	T/2015*
9	0.0/2015*	1.2/1982	0.0/2015*	1.2/1973	0.7/1989	0.4/1962	0.6/2011	0.0/2015*
10	0.0/2015*	T/1985	T/1985*	4.0/1955	0.6/1978	1.7/1969	T/1952	T/1980
11	T/2008	2.1/1978	3.0/1945	2.9/1951	6.9/2001	1.0/1973	0.3/1967	0.4/1980
12	0.0/2015*	T/1993*	2.0/2009	2.4/1949	5.8/2001	T/1969*	1.8/1956	0.0/2015*
13	0.0/2015*	T/1978	T/2012*	2.5/1949	0.4/2001	0.9/1981	7.0/1956	T/1998
14	0.0/2015*	T/1972*	0.7/1967	0.7/1993	T/1998*	1.1/1963	T/2009	0.0/2015*
15	0.0/2015*	0.5/1957	6.0/1967	9.0/1952	T/2012*	7.5/1952	0.0/2015*	0.0/2015*
16	0.0/2015*	1.9/1964	1.0/1987	3.0/1993	T/1990*	2.4/1952	T/1995	0.0/2015*
17	0.0/2015*	2.0/1964	2.0/1987	6.0/1988	0.1/2006*	4.0/1982	0.1/1971	T/1977
18	T/1943	T/2002*	4.0/1967	8.0/1955	T/1994*	T/1983*	T/1957	T/1974*
19	T/1949	0.0/2015*	2.5/1967	1.6/1949	0.6/1962	0.8/1979	T/1964	T/1974*
20	0.2/1957	T/1961	1.3/2010	8.6/1982	4.0/1944	T/2011*	0.0/2015*	T/1987
21	0.0/2015*	T/2010*	3.8/1977	1.8/2010	6.0/1944	T/2011*	0.5/1967	0.0/2015*
22	0.0/2015*	0.5/1947	1.0/1996	7.0/1983	7.0/1944	0.6/1964	1.9/1980	0.0/2015*
23	0.0/2015*	0.0/2015*	0.4/1977	4.3/2012	5.7/1969	1.0/1983	T/1961	0.0/2015*
24	T/1995	1.0/1983	5.5/1979	12.5/1969	8.5/1969	0.1/1983	T/1971	0.0/2015*
25	T/1995	T/1965	2.0/2008*	10.5/1969	4.0/1993	0.2/1994	T/1994	0.0/2015*
26	0.0/2015*	T/1994	1.8/2012*	1.0/1999	4.0/1993	0.0/2015*	T/1994	0.0/2015*
27	0.0/2015*	1.5/1984	1.8/1971	0.4/1994	1.5/1955	0.0/2015*	0.0/2015*	0.0/2015*
28	0.0/2015*	1.4/1981	4.6/2004	1.7/1950	5.6/1969	1.4/1998	0.0/2015*	0.0/2015*
29	T/1996*	3.2/2001	1.6/2004	6.0/1981	T/1944	0.8/1982	0.0/2015*	0.0/2015*
30	1.8/1978	T/1967	1.0/1992*	1.4/1979	-	0.4/1977	T/1951	0.0/2015*
31	T/1996	-	1.5/1973	2.0/1979	-	0.5/1967	-	0.0/2015*

* Also in previous years.

Bold values are the monthly extremes.

Bold and underlined values are the all-time extremes.

Note: There is no record of snow** in Bishop in June, July or August. The only record of snow in September is a trace on the 18th which was recorded in 1955 when ice pellets were observed.

** "Snow" is defined as the amount of snow, sleet, ice pellets or hail for measurements.

Bishop Seasonal Snowfall

Season	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
1943-1944	M	M	0.0	T	0.0	T	3.0	17.0	T	0.0	0.0	0.0	20.0
1944-1945	0.0	0.0	0.0	0.0	T	T	0.0	2.5	T	0.0	0.0	0.0	2.5
1945-1946	0.0	0.0	0.0	0.0	0.0	7.0	0.0	2.0	T	0.0	0.0	0.0	9.0
1946-1947	0.0	0.0	0.0	0.0	M	0.0	T	0.1	0.0	T	0.0	0.0	M
1947-1948	0.0	0.0	0.0	0.0	0.5	1.0	0.0	1.0	T	0.0	T	0.0	2.5
1948-1949	0.0	0.0	0.0	T	0.0	4.8	11.1	T	T	0.0	T	0.0	15.9
1949-1950	0.0	0.0	0.0	T	0.0	T	1.7	0.0	T	T	0.0	0.0	1.7
1950-1951	0.0	0.0	0.0	0.0	0.0	0.0	2.9	T	T	T	0.0	0.0	2.9
1951-1952	0.0	0.0	0.0	0.0	T	4.0	14.0	0.0	14.5	T	0.0	0.0	32.5
1952-1953	0.0	0.0	0.0	0.0	T	1.0	T	T	0.0	0.0	0.0	0.0	1.0
1953-1954	0.0	0.0	0.0	0.0	T	T	T	T	T	0.0	0.0	0.0	T
1954-1955	0.0	0.0	0.0	0.0	0.0	T	20.0	1.5	0.0	T	T	0.0	21.5
1955-1956	0.0	0.0	T	0.0	0.0	1.0	3.0	0.0	0.0	8.8	0.0	0.0	12.8
1956-1957	0.0	0.0	0.0	0.0	0.0	0.0	T	T	0.0	T	0.0	0.0	T
1957-1958	0.0	0.0	0.0	0.2	1.0	0.0	T	T	T	1.0	0.0	0.0	1.2
1958-1959	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.2	T	0.0	0.0	0.0	2.9
1959-1960	0.0	0.0	0.0	0.0	0.0	T	1.0	T	0.0	0.0	0.0	0.0	1.0
1960-1961	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	0.0	0.0	T
1961-1962	0.0	0.0	0.0	0.0	T	0.0	1.2	0.6	0.4	0.0	0.0	0.0	2.2
1962-1963	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	T	0.0	0.0	1.6
1963-1964	0.0	0.0	0.0	0.0	0.0	0.0	5.0	T	0.6	T	2.3	0.0	7.9
1964-1965	0.0	0.0	0.0	0.0	3.9	0.5	0.2	0.0	0.0	1.4	T	0.0	6.0
1965-1966	0.0	0.0	0.0	0.0	T	0.0	0.0	T	0.0	0.0	0.0	0.0	T
1966-1967	0.0	0.0	0.0	0.0	0.0	0.0	7.6	T	0.5	2.2	0.0	0.0	10.3
1967-1968	0.0	0.0	0.0	0.0	T	13.2	T	0.0	T	0.0	0.0	0.0	13.2
1968-1969	0.0	0.0	0.0	0.0	0.0	2.2	23.2	31.9	2.0	0.0	0.0	0.0	59.3
1969-1970	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.1	T	0.0	0.0	4.1
1970-1971	0.0	0.0	0.0	0.0	T	2.3	0.1	T	0.0	0.1	0.0	0.0	2.5
1971-1972	0.0	0.0	0.0	0.0	0.0	1.8	T	0.0	0.0	0.0	0.0	0.0	1.8
1972-1973	0.0	0.0	0.0	0.0	T	0.0	6.0	T	1.0	0.0	0.0	0.0	7.0
1973-1974	0.0	0.0	0.0	0.0	T	1.5	13.8	0.0	1.1	0.0	T	0.0	16.4
1974-1975	0.0	0.0	0.0	0.0	0.0	T	0.0	T	T	0.0	0.0	0.0	T
1975-1976	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.0	0.4	0.0	0.0	0.0	21.5
1976-1977	0.0	0.0	0.0	0.0	0.0	T	2.6	T	0.4	0.0	T	0.0	3.0
1977-1978	0.0	0.0	0.0	0.0	T	4.5	0.4	1.5	T	T	0.0	0.0	6.4
1978-1979	0.0	0.0	0.0	1.8	2.1	0.6	4.8	T	0.8	0.0	T	0.0	10.1
1979-1980	0.0	0.0	0.0	0.0	0.0	5.5	0.8	0.0	T	1.9	0.4	0.0	8.6
1980-1981	0.0	0.0	0.0	0.0	0.0	T	6.0	T	3.8	0.3	0.0	0.0	10.1
1981-1982	0.0	0.0	0.0	2.1	0.0	20.7	T	4.8	0.0	0.0	0.0	0.0	27.6
1982-1983	0.0	0.0	0.0	1.2	T	8.1	T	1.1	0.0	0.0	0.0	0.0	10.4
1983-1984	0.0	0.0	0.0	1.0	0.0	T	T	0.0	0.0	0.0	0.0	0.0	1.0
1984-1985	0.0	0.0	0.0	1.5	7.9	T	T	0.5	0.0	0.0	0.0	0.0	9.9
1985-1986	0.0	0.0	0.0	0.6	1.3	0.0	T	T	0.0	0.0	0.0	0.0	1.9
1986-1987	0.0	0.0	0.0	0.0	0.0	0.9	0.5	0.0	0.0	0.0	T	0.0	1.4
1987-1988	0.0	0.0	0.0	0.0	5.2	8.9	0.0	0.0	0.0	0.0	0.4	0.0	14.5

1988-1989	0.0	0.0	0.0	0.0	0.0	M	0.0	0.7*	0.0	0.0	0.0	0.0	M
1989-1990	0.0	0.0	0.0	0.0	0.0	0.1	T	0.0	0.0	0.0	0.0	0.0	0.1
1990-1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2*	0.0	0.0	0.0	0.2*
1991-1992	0.0	0.0	0.0	0.0	0.0	M	0.7*	0.2	0.0	0.0	0.0	0.0	M
1992-1993	0.0	0.0	0.0	0.0	0.0	1.0	15.8	8.3	0.0	0.0	0.0	0.0	25.1
1993-1994	0.0	0.0	0.0	0.0	T	0.0	0.4	M	0.2	T	0.0	0.0	M
1994-1995	0.0	0.0	0.0	0.0	T	T	14.0	0.0	T	T	0.0	0.0	14.0
1995-1996	0.0	0.0	0.0	T	0.0	M	M	T	T	0.0	0.0	0.0	M
1996-1997	0.0	0.0	0.0	T	T	1.0	T	T	0.0	0.0	0.0	0.0	1.0
1997-1998	0.0	0.0	0.0	0.0	0.0	2.4	T	3.6	1.7	1.7	T	0.0	9.4
1998-1999	0.0	0.0	0.0	0.0	0.0	T	12.0	0.0	T	0.1	0.0	0.0	12.1
1999-2000	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	T	0.0	0.0	0.0	T
2000-2001	0.0	0.0	0.0	0.0	0.0	0.0	T	13.1	0.0	T	0.0	0.0	13.1
2001-2002	0.0	0.0	0.0	0.0	3.2	T	T	0.0	T	0.0	0.0	0.0	3.2
2002-2003	0.0	0.0	0.0	0.0	T	0.2	0.0	T	T	T	0.0	0.0	0.2
2003-2004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	0.0	0.0	0.0	T
2004-2005	0.0	0.0	0.0	0.0	0.0	6.2	30.1	0.0	0.0	0.0	0.0	0.0	36.3
2005-2006	0.0	0.0	0.0	0.0	0.0	3.4	18.4	0.1	0.0	0.0	0.0	0.0	21.9
2006-2007	0.0	0.0	0.0	0.0	0.0	T	1.1	0.0	0.0	0.0	0.0	0.0	1.1
2007-2008	0.0	0.0	0.0	0.0	0.0	0.0	M	M	0.0	0.0	0.0	0.0	M
2008-2009	0.0	0.0	0.0	T	0.0	2.0*	T	M	M	T	0.0	0.0	M
2009-2010	0.0	0.0	0.0	0.0	0.0	2.0	4.0	T	0.0	T	0.0	0.0	6.0
2010-2011	0.0	0.0	0.0	0.0	T	1.3	0.4	T	T	0.8	0.0	0.0	2.5
2011-2012	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.3	0.0	T	0.0	0.0	4.9
2012-2013	0.0	0.0	0.0	0.0	0.0	2.8	T	T	0.0	0.0	0.0	0.0	2.8
2013-2014	0.0	0.0	0.0	0.0	T	0.5	T	0.0	0.0	0.1	0.0	0.0	0.6
2014-2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	T	0.0	T
2015-2016	0.0	0.0	0.0	0.0	0.0	T							

*Total Is Incomplete.

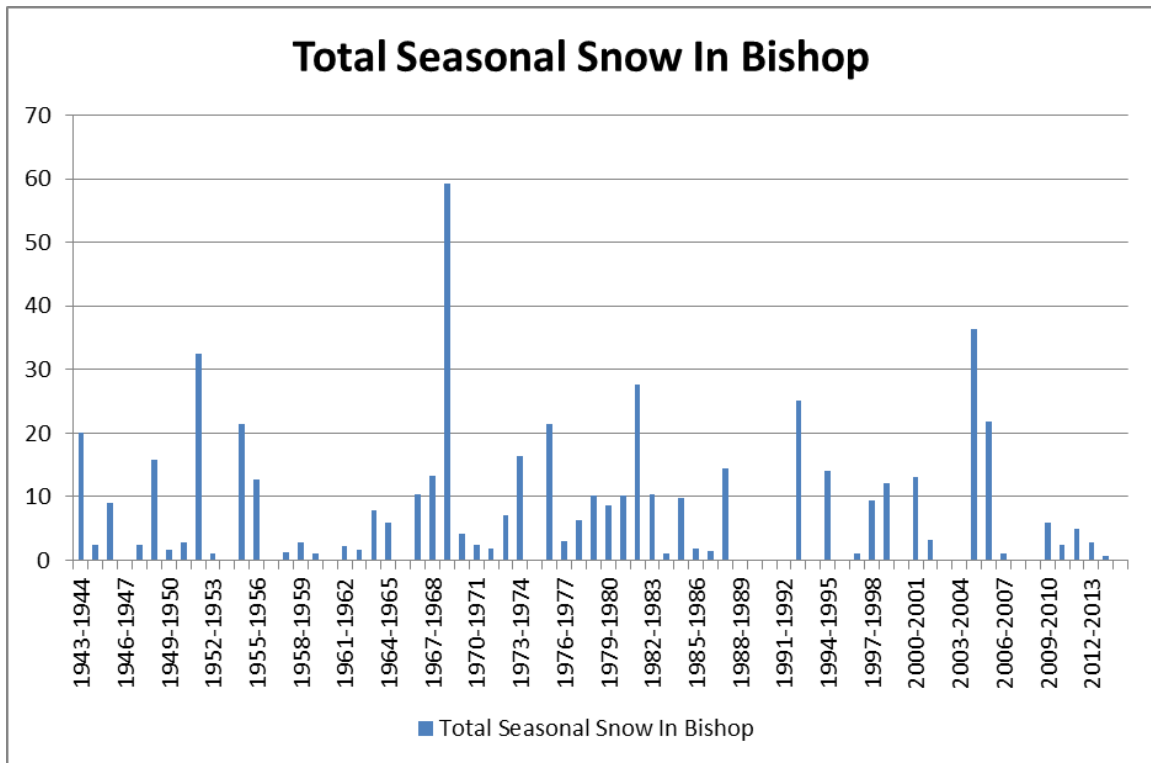


Figure 17 – Total Seasonal Snow In Bishop.

Normal Relative Humidity Values

Relative Humidity Values (In Percent)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
10:00 LST	52	45	34	25	23	20	20	22	25	28	36	45	31
16:00 LST	36	29	23	18	19	15	15	15	17	19	27	35	22

Based on 30 year values from NOAA's National Centers for Environmental Information (NCEI).

Average Number of Days With Dense Fog*

Month	Number of Days
January	0.3
February	0.2
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0.4
Annual	0.9

* Dense fog is defined as visibility of $\frac{1}{4}$ or less.

Values above are from NOAA's National Centers for Environmental Information (NCEI) and based on 28 years of data.

Average Number of Days With Thunderstorms

Month	Number of Days
January	0
February	0
March	0.1
April	0
May	0.2
June	0.3
July	0.9
August	0.4
September	0.2
October	0.1
November	0
December	0
Annual	2.2

Values above are from NOAA's National Centers for Environmental Information (NCEI) and based on 30 years of data.

Mean Sea Level Pressure

Month	Mean Sea Level Pressure (in inches)
January	30.12
February	30.04
March	29.96
April	29.90
May	29.84
June	29.82
July	29.86
August	29.87
September	29.90
October	29.98
November	30.08
December	30.13
Annual	29.96

Values above are from NOAA's National Centers for Environmental Information (NCEI) and based on 27 years of data.

Extreme Barometric Pressure – Reduced To Sea Level

Period of Record is 1943-Present.

Highest Ever

30.83 inches on December 22, 1967

Lowest Ever

28.97 inches on January 21, 2010

Wind

Average Wind Speed – Normal and Highest By Month and Year

Month	Normal	Windyest Month*
January	Northwest at 7.3 mph	10.9 mph / 1949
February	North at 8.1 mph	9.7 mph / 1997
March	North at 9.9 mph	11.4 mph / 1999
April	North at 10.0 mph	11.1 mph / 1999
May	North at 9.3 mph	9.9 mph / 2010
June	North at 8.4 mph	9.8 mph / 2012
July	South at 8.0 mph	10.5 mph / 2012
August	South at 8.0 mph	9.6 mph / 1999
September	South at 7.6 mph	8.2 mph / 2014
October	Northwest at 7.7 mph	8.4 mph / 2014
November	Northwest at 7.4 mph	8.3 mph / 2015
December	North at 6.9 mph	8.3 mph / 1999
Annual	North at 8.2 mph	8.6 mph / 1999

Normal average wind speed values are based on a period of 27 years of data from NOAA's National Centers for Environmental Information (NCEI) from 1984-2010.

*Period of record is January and February 1949, May 1995 – Present.

Record Wind Gusts By Month (1975 – Present)

Month	Highest Value (Direction^/Speed/Date)
January	350 degrees at 53 mph / January 5, 2000
February	230 degrees at 67 mph / February 6, 2001
March	250 degrees at 59 mph / March 23, 1977
April	350 degrees at 62 mph / April 29, 2011
May	340 degrees at 63 mph / May 25, 2012
June	60 mph / June 24, 1975
July	60 mph / July 12, 1987
August	75 mph / August 2, 1976
September	010 degrees at 59 mph / September 20, 2011
October	350 degrees at 61 mph / October 27, 2009
November	360 degrees at 60 mph / November 30, 2011
December	68 mph / December 14, 1988
Annual	75 mph / August 2, 1976

^ Directions are not available for some months as it was not listed in any observations or on any Local Climatological Data (LCD) publications. This is due to these values having occurred when this station took manual observations and was closed and the highest numerical gust value would have likely been obtained from a recording chart that only indicated a velocity.

Holiday Weather

Normals use the period from 1981 through 2010.

Statistics made from the entire period of record even if the holiday did not exist the entire period.

New Year's Day

	Normal	Highest	Lowest
Low Temperature	22	45/1997	8/1965 & 1976
High Temperature	53	70/1959	29/1952
Precipitation	0.05"	0.91"/1997	-
Snow	0.1"	7.0"/1955	-
Snow Depth	-	4"/1974	-

Martin Luther King, Jr. Day

	Normal*	Highest	Lowest
Low Temperature	24	39/2011	2/1949
High Temperature	53	76/1971 & 2011	37/2001
Precipitation	0.03"	1.15"/1978	-
Snow	0.1"	1.2"/1949	-
Snow Depth	-	6"/1988	-

*Not computed by NCEI.

President's Day

	Normal*	Highest	Lowest
Low Temperature	29	40/1977 &1996	12/1969
High Temperature	58	80/2015	36/1944
Precipitation	0.03"	1.28"/1959	-
Snow	0.1"	0.6"/1944	-
Snow Depth	-	9"/1969	-

*Not computed by NCEI.

Memorial Day

	Normal*	Highest	Lowest
Low Temperature	47	60/1968 &2001	30/2011
High Temperature	87	100/1984	56/1945
Precipitation	0.00"	0.12"/2008	-
Snow	0.0"	0.0"	-
Snow Depth	-	0"	-

*Not computed by NCEI.

Independence Day

	Normal	Highest	Lowest
Low Temperature	55	67/2001	42/1955
High Temperature	97	107/1984 &2007	86/1982
Precipitation	0.01"	0.03"/2001	-
Snow	0.0"	0.0"	-
Snow Depth	-	0"	-

Labor Day

	Normal*	Highest	Lowest
Low Temperature	51	63/1950	40/1964
High Temperature	93	103/1955	79/1965
Precipitation	0.00"	0.28"/1978	-
Snow	0.0"	0.0"	-
Snow Depth	-	0"	-

*Not computed by NCEI.

Columbus Day

	Normal*	Highest	Lowest
Low Temperature	37	48/2015	23/1986
High Temperature	78	93/1995 &2000	51/1960
Precipitation		0.16"/1957	-
Snow	0.0"	0.0"	-
Snow Depth	-	0"	-

*Not computed by NCEI.

Halloween

	Normal	Highest	Lowest
Low Temperature	33	57/2008	18/1971 &2003
High Temperature	70	84/1960 &1966	48/1966
Precipitation	0.01"	0.14"/1996	-
Snow	0.0"	Trace/1996	-
Snow Depth	-	0"	-

Veteran's Day

	Normal*	Highest	Lowest
Low Temperature	29	42/1954 &1980	10/2000
High Temperature	65	79/1956	34/1946
Precipitation	0.02"	0.36"/1944	-
Snow	0.0"	2.1"/1978	-
Snow Depth	-	Trace/1985	-

*Not computed by NCEI.

Thanksgiving Day

	Normal*	Highest	Lowest
Low Temperature	24	39/2008	12/1955 &1993
High Temperature	57	80/1949	37/1983
Precipitation	0.02"	0.95"/1983	-
Snow	0.0"	1.0"/1983	-
Snow Depth	-	0"	-

*Not computed by NCEI.

Christmas Day

	Normal	Highest	Lowest
Low Temperature	22	42/1964	2/1948
High Temperature	53	68/1985	36/1988
Precipitation	0.03"	0.38"/2008	-
Snow	0.0"	2.0"/1945 &2008	-
Snow Depth	-	3"/1984	-

Ten Significant Weather Events

Below is a list of events in chronological order of significant weather events in Bishop, California. This list is intended to capture extreme events in terms of their place in meteorology and impact on society in Bishop. It is not intended to be all-inclusive and should be considered objective in nature.

Flood of January 25-26, 1914

One of the earliest significant weather events documented in Bishop took place on January 25-26, 1914 when a storm system spread heavy precipitation across the eastern slopes of the southern Sierra Nevada and the Owens Valley. Temperatures stayed above freezing during most of this event, allowing for the precipitation to fall as rain on the valley floor and in the lower elevations of the Sierra Nevada. A total of 5.40 inches of precipitation was measured in Bishop in a 48 hour period ending on January 26th by a cooperative weather observer for the federal government. While there is no direct evidence of it, it is likely given the heavy precipitation totals and above freezing temperatures that some of the flooding may have been enhanced by snowmelt from the Sierra Nevada as well as runoff from precipitation that fell there. Newspaper reports from the *Inyo Independent* mentioned that almost every house in Bishop was damaged by flooding (Kattelmann 1992). Several feet of water covered streets (Figure 18).



Figure 18 - Flooded streets in Bishop on January 25, 1914. Photo credit: Eastern California Museum.

Prolonged Cold and Snow – January 1949



Figure 19 – The Bishop Airport on January 20, 1949. Photo credit: NCDC.

The infamous month of January 1949 (Figure 19) still holds as the coldest month ever on record in Bishop. The average temperature of 23.8 degrees recorded during this month is 3.4 degrees colder than the second coldest month on record which is January 1955. There were 9 days in January 1949 with a high of 32 degrees or below, with an all-time record stretch of 5 consecutive days that featured highs at or below freezing. An all-time record of eight consecutive days with a trace or more of snow was also set this month when snow fell on each day from January 17th through the 24th. A persistent trough in the mid and upper levels of the atmosphere over the western United States was responsible for the prolonged cold experienced during this month.

High Wind Event – May 1, 1950

A cold front and associated upper level trough (Figure 20) passing through the Owens Valley in the afternoon and evening hours generated powerful winds that did around \$75,000 in damage to Bishop and surrounding areas (in 1950 dollars). Several planes were overturned at the Bishop Airport. Numerous trees were toppled by the wind and took down power lines or fell on buildings. Some of the fallen power lines started fires that burned brush. Many cars were sandblasted by blowing dust. The highest sustained wind at the Bishop Airport was 40 mph.

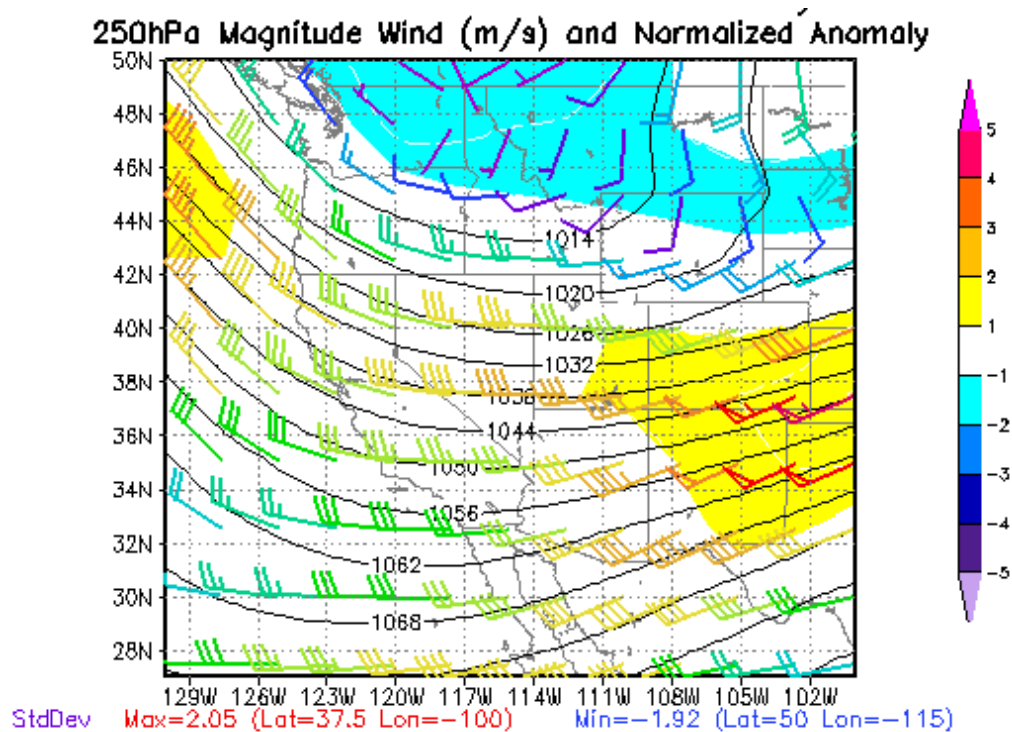


Figure 20 - Renanalysis map showing 250 mb wind barbs and height lines (in black) in decameters at 00Z on May 6, 1950 showing an upper level trough across the western United States. Shaded colors show standardized anomalies. Image courtesy Penn State University.

Biggest Snowstorm Ever, January 23-25, 1969

Bishop's biggest snowstorm ever occurred during a record stretch of nine consecutive days with measurable precipitation. From January 18th through the 26th, a moist flow from the Pacific brought several rounds of precipitation to Bishop. Following a storm system that departed towards the northern and central Rockies on the 22nd, much colder air filtered into the Owens Valley of California. Another storm system approaching from the Pacific Ocean (Figure 21) then spread precipitation into this cold air mass from the 23rd into the 26th. Snow fell starting around 11:00 PM on the 23rd until the morning of January 25th, when snow levels rose due to milder air being pushed into the area courtesy of increasing southerly flow ahead of the approaching storm system. Although precipitation continued to fall into the 26th, the precipitation that fell from mid-morning on the 25th into the 26th was all rain.

The total snowfall at the Bishop Airport was 23.1 inches for January 23rd through the 25th which ranks as the biggest snowstorm ever. The snow depth at 6:00 AM on January 25th of 22 inches ranks as the greatest on record.

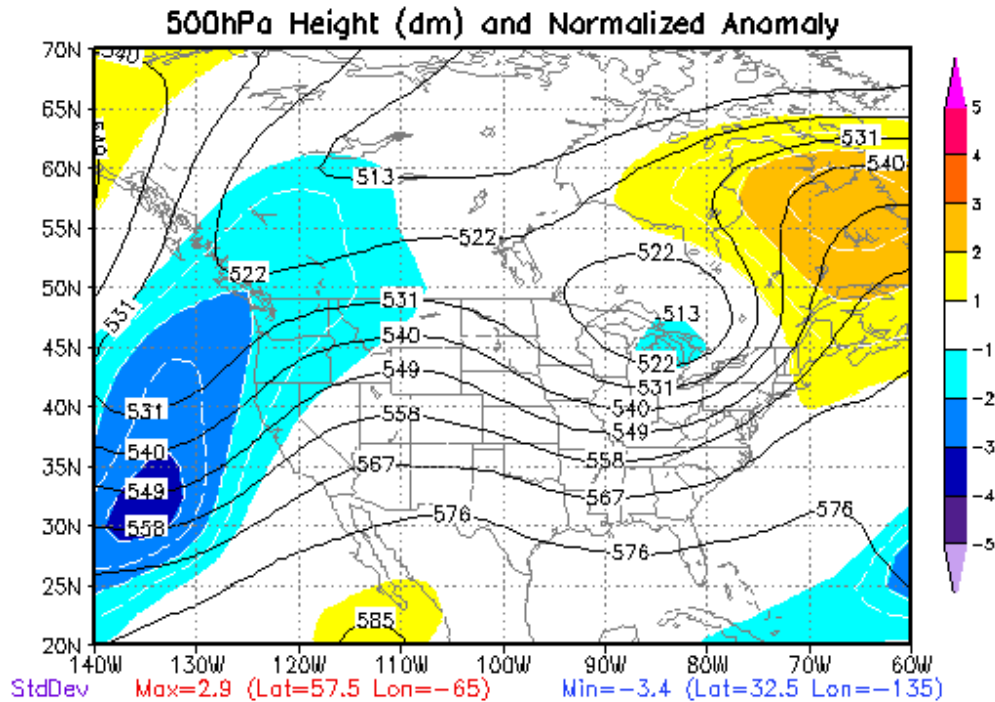


Figure 21 – 500 mb reanalysis map at 12Z January 25, 1969 showing a storm system over the eastern Pacific that produced an all-time record single-storm snowfall at Bishop, California. Black lines indicate 500 mb heights in decameters. Shaded colors show standardized anomalies. Image courtesy Penn State University.

February 23-25, 1969 Storm

The winter of 1968-1969 was an exceptionally active year for storms in California. In the Bishop area, the storm of February 23rd-25th was the second of the two biggest storms that winter. A storm system approaching from the Pacific (Figure 22) accompanied by a feed of moisture produced heavy precipitation, mainly on the 24th. A total of 3.50 inches of precipitation fell that day, making it the second wettest day on record. The total precipitation from this storm was 4.21 inches. Not all of the precipitation fell as rain, as snow from this storm totaled 16.2 inches, which is the sixth largest snowstorm on record in Bishop. The inclement weather hindered travel on Highway 395 in the area with the highway being temporarily closed. This storm helped make the winter of 1968-1969 the snowiest on record in Bishop. Only one other winter has seen more than one event with at least a foot of snow recorded in Bishop, which is the winter of 2004-2005.

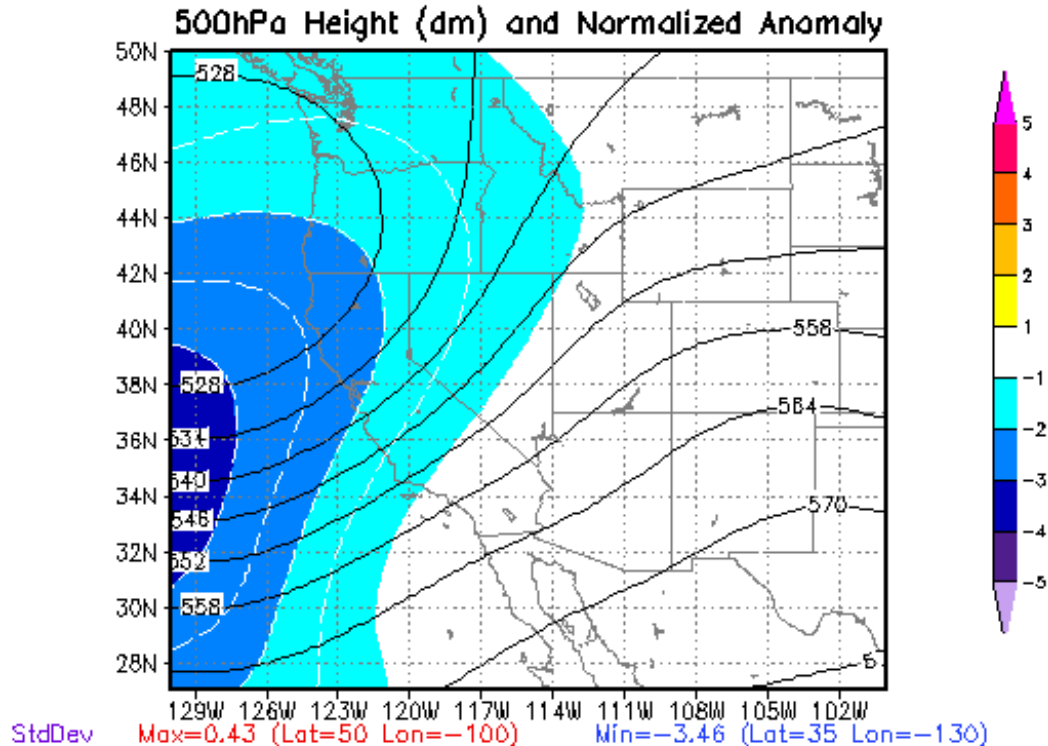


Figure 22 – 500 mb reanalysis map from 00Z February 25, 1969. Black lines indicate 500 mb heights in decameters. Shaded colors show standardized anomalies. Image courtesy Penn State University.

North Creek Dam Failure and Flash Flood, September 24-26, 1982

Tropical moisture worked into central and southern California in advance of Tropical Storm Olivia, which was located off the Pacific coast of Baja California. This resulted in several days of heavy rain across western Inyo County that climaxed on September 25th and 26th. Measured totals of two to four inches fell in the Sierra Nevada at South Lake and Lake Sabrina at cooperative observer weather stations with unconfirmed reports of seven inches. In Bishop itself, the wettest day was September 24th when 0.73 inch fell at the official climate station.

Runoff from the heavy rain in the Sierra Nevada was enough to erode and eventually bust through an earthen dam at North Lake on Bishop Creek at 9:00 AM on September 26th (Figure 23). The failure of the dam virtually drained the 15 foot deep North Lake of all of its water. Additional runoff further down creek also resulted in a rapid rise on Bishop Creek. A peak flow at a gaging station of 1,750 cubic feet per second was measured which was the highest on record and considered a 150 year flood. By the time the flood reached Bishop, the amount of water had mitigated somewhat.

Although the most significant flooding took place in Aspendell and in the foothills just west of Bishop, portions of Bishop did see flooding. Portions of Highway 395 were closed due to flooding which cut off access into Bishop. In northern and

western portions of Bishop, some 1,700 residents of 200 homes were evacuated by Inyo County Sheriff Deputies who used bullhorns. Numerous hotels and businesses along Highway 395 were also evacuated as a precaution, however, no damage to these was reported.

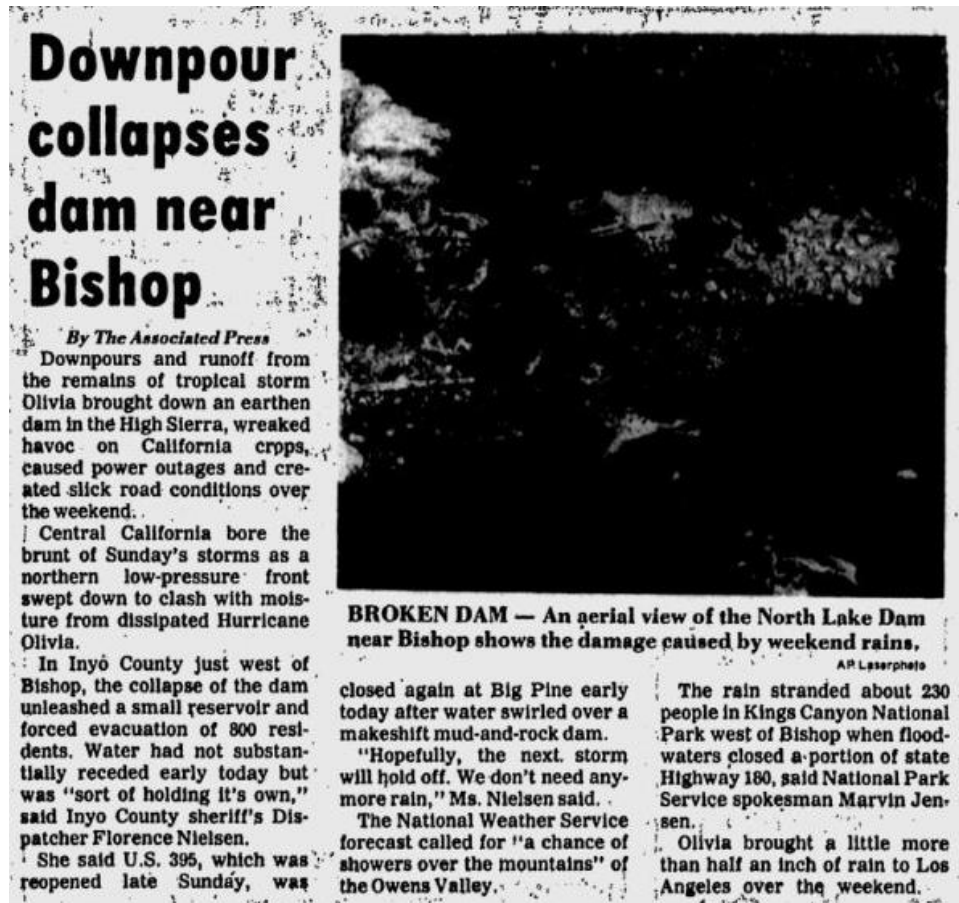


Figure 23 – Associated Press News article on the North Lake Dam failure and flooding in Bishop. Image credit: Google News.

Record Cold of December 21-23, 1990

Bishop's all-time record low of 8 below has been reached on two instances: December 27, 1988 and again on December 22, 1990. Unlike the first instance which followed a significant snowstorm on Christmas Eve, the second instance occurred during a completely dry month with no snow on the ground.

A rather deep trough in the mid and upper levels of the atmosphere was carved out across the western United States from December 21st through the 23rd (Figure 24). This allowed Arctic air to descend very far south, reaching all the way into southern California. The low temperatures at Bishop for these three days were -4, -8 and -5. This is the greatest number of consecutive days with a low below zero ever recorded in Bishop. High temperatures each of these days were 24, 35 and 36 degrees respectively.

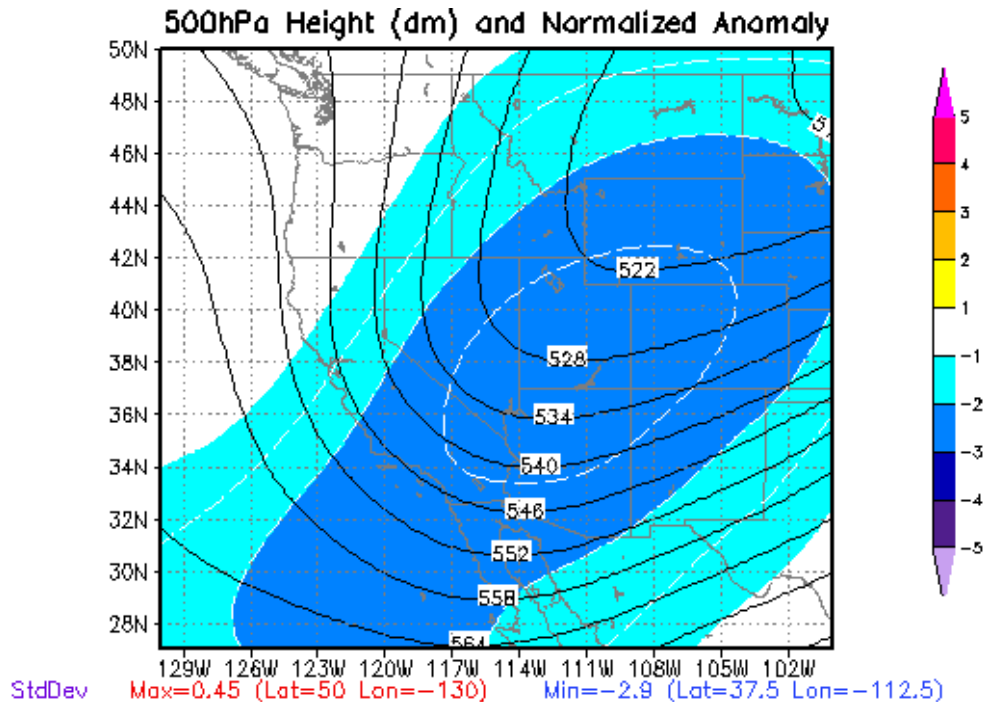


Figure 24 – 500 mb reanalysis map from 12Z December 22, 1990. Black lines indicate 500 mb heights in decameters. Shaded colors show standardized anomalies. Image courtesy Penn State University.

Hottest Temperature Ever – July 10, 2002

Bishop's highest temperature ever recorded of 110 degrees was reached in the late afternoon hours of July 10, 2002. This occurred during a stretch of days that lasted from July 4th through the 16th of that year where high temperatures reached into the triple digits. A sprawling ridge of high pressure centered over the western United States was responsible for this stretch of hot weather at Bishop. Figure 25 shows the 500 mb chart from 00Z on July 11th. On this map, a 600 decameter high pressure was centered over northwestern Nevada.

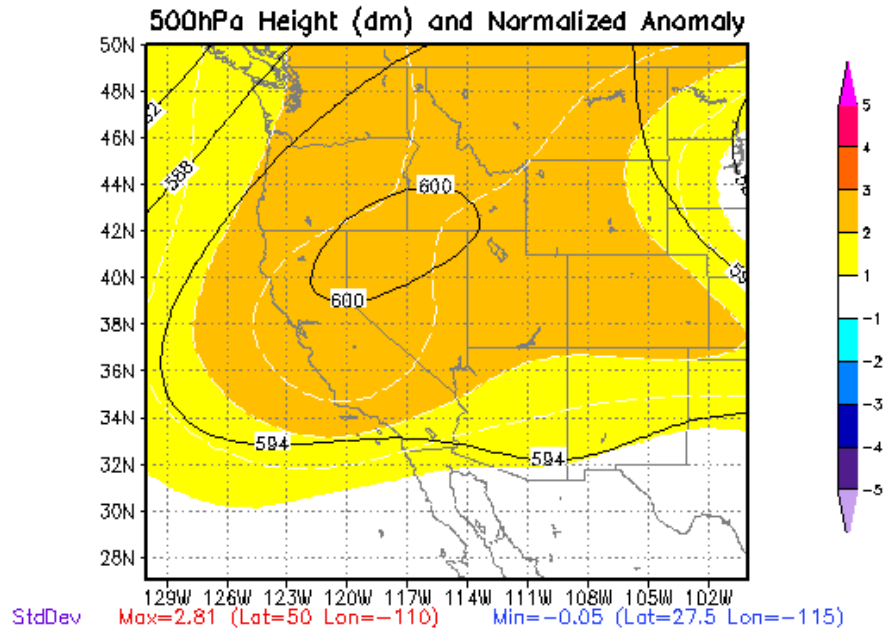


Figure 25 – 500 mb reanalysis map from 00Z July 11, 2002. Black lines indicate 500 mb heights in decameters. Shaded colors show standardized anomalies. Image courtesy Penn State University.

The Wettest Day Ever – January 4, 2008

Bishop's wettest day ever in official weather records occurred on January 4, 2008 when 4.00 inches of rain fell. Precipitation began at 7:45 AM PST as a wintry mix but quickly changed over to all rain by 8:26 AM. Beginning at 11:14 AM, observations reported heavy rain. Heavy rain was reported continuously through 9:56 PM on January 4th. Rain finally ended at 1:23 AM on January 5th. The highest one hour precipitation amount on January 4th was 0.34 inch which was recorded between 3:00 and 4:00 PM, 6:00 PM and 7:00 PM as well as from 7:00 PM to 8:00 PM.

The heavy rain was caused by a moist flow along and ahead of a cold front that extended from a strong area of low pressure located just offshore of the Pacific Northwest (Figure 26). Precipitation spilled over the southern Sierra Nevada and into the Owens Valley continuously from the late morning into the closing hours of the day (Figure 27). The total rain that fell at Bishop on January 4, 2008 was nearly 77 percent of the normal annual precipitation and wetter than a number of years have been in Bishop. Despite the heavy rainfall, only minor flooding of streets and low-lying areas was reported in Bishop. Some garages were flooded and sandbags were placed along creeks due to minor flooding.

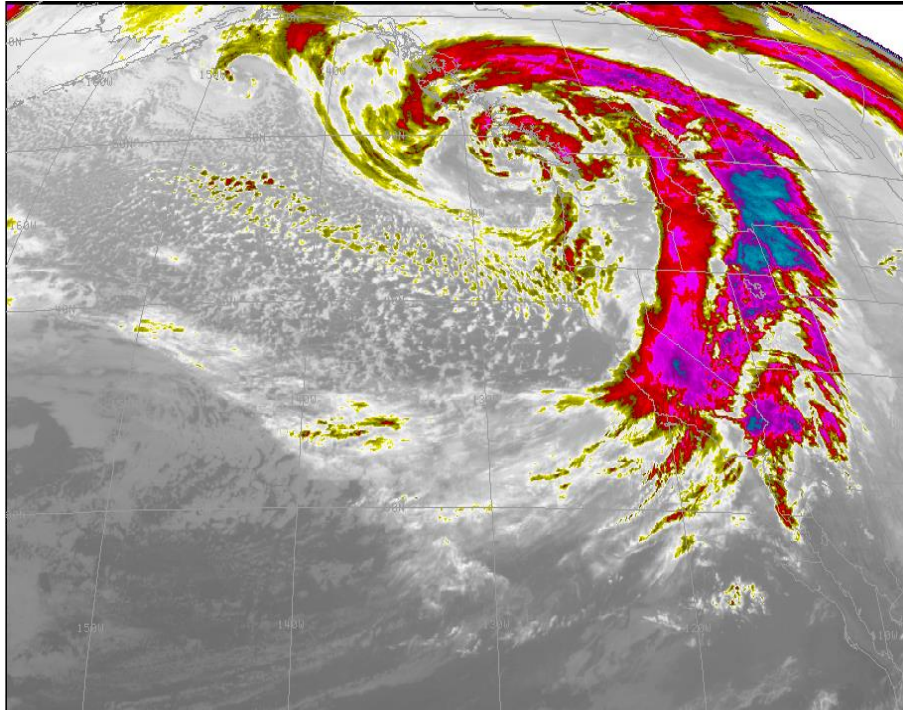


Figure 26 - Infrared satellite image at 0330Z on January 5, 2008 showing an area of low pressure off the coast of Washington. A cold front extends southwest across central California.

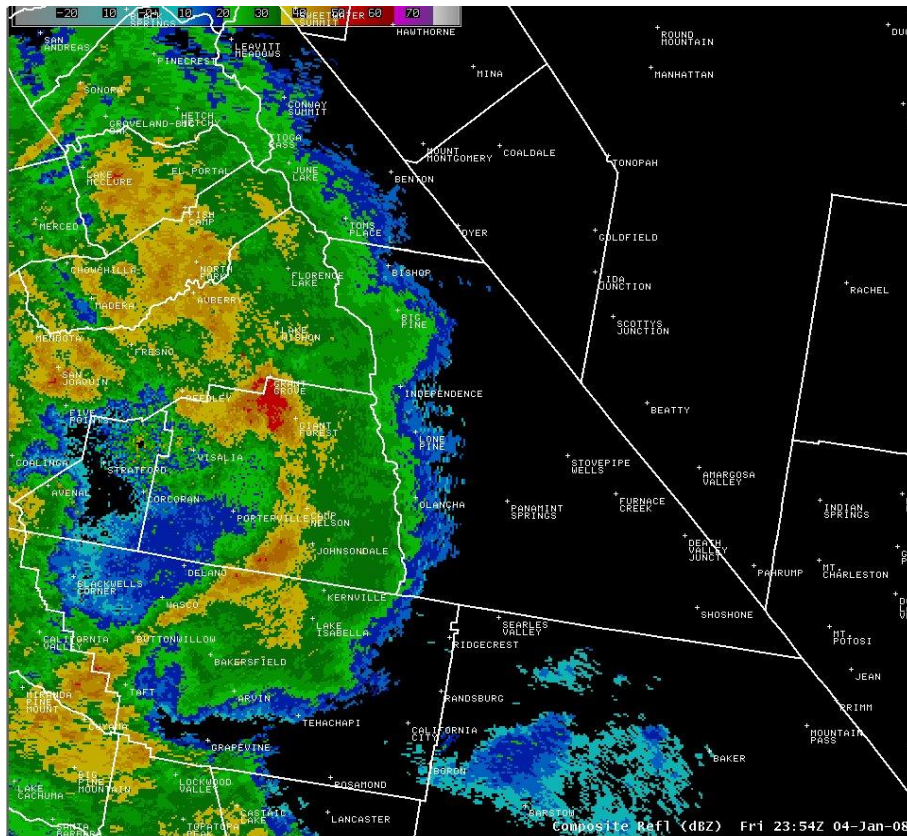


Figure 27 – Composite radar imagery at 23:54Z on January 4, 2008 showing precipitation spilling over the southern Sierra Nevada and into the Owens Valley.

Largest Hail Ever – October 5, 2010

The largest hail ever documented in Bishop fell in the early afternoon hours of October 5, 2010. For about fifteen minutes, hail up to penny size (three-quarters of an inch in diameter) was observed by a spotter located about a mile southeast of the center of Bishop. The thunderstorm that produced this hail was associated with a cold upper-level low that had dropped south towards Baja California and injected a push of late season monsoonal moisture into the Owens Valley.

WSR-88D images obtained from the Hanford, California radar site show a thunderstorm moved northwest across Bishop was responsible for producing this hail. Figures 28 and 29 show an image of the storm around the time it was producing hail at 21:25Z. It should be noted that the radar was sampling this storm from quite a distance away and is also blocked by the Sierra Nevada. Figure 24 shows a cross section of this storm, with a core centered around 18,000 feet.

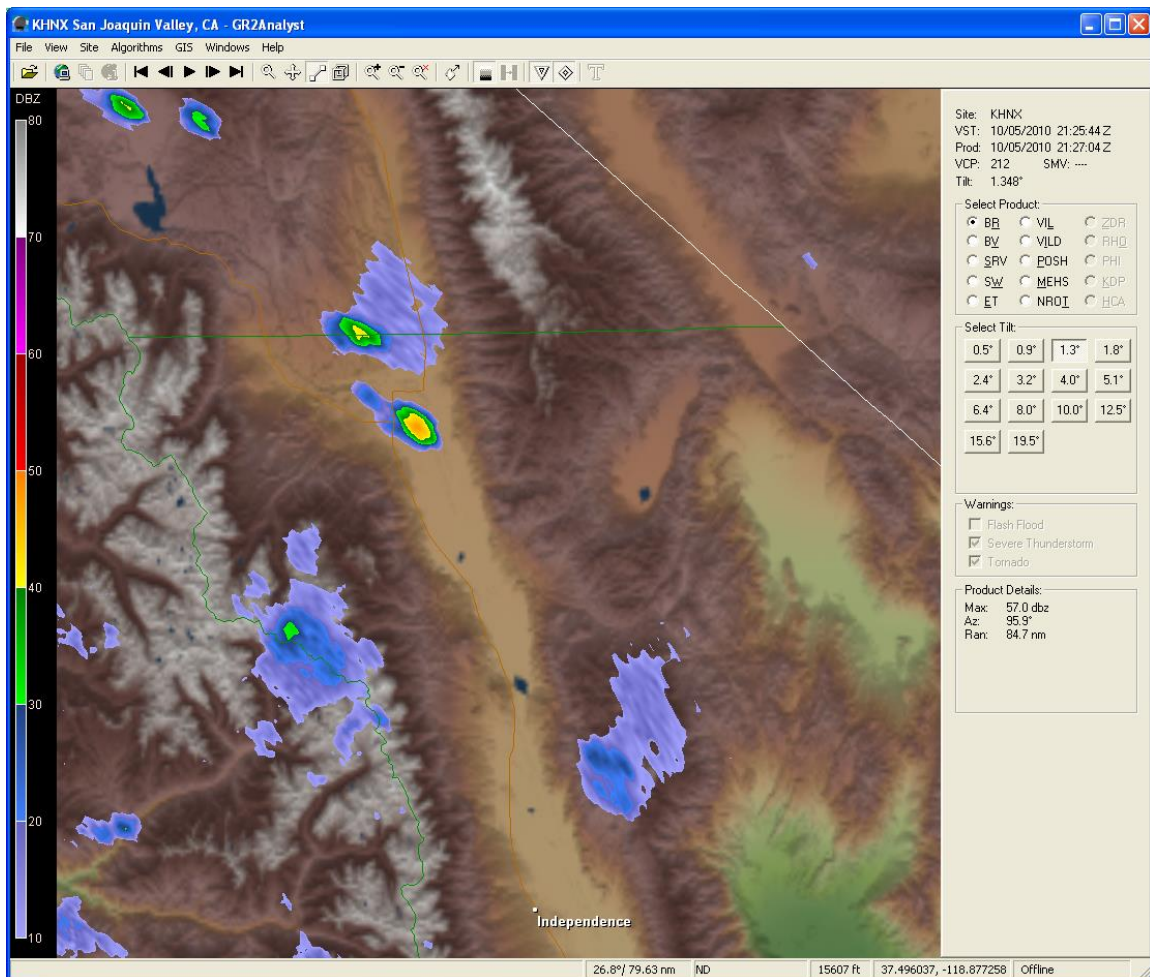


Figure 28 – Hanford (KHNX) WSR-88D 1.3 degree radar image at 21:25Z on October 5, 2010 showing a thunderstorm over southeast Bishop.

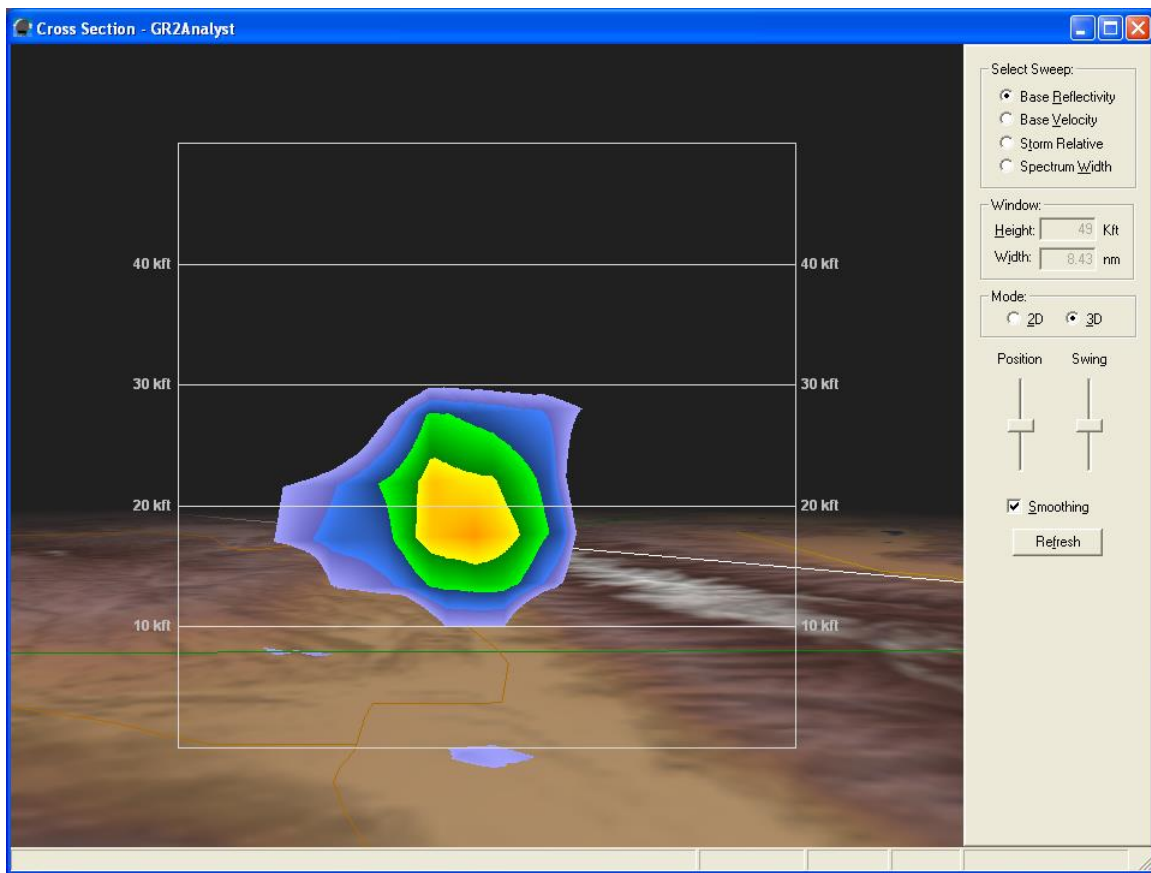


Figure 29 – Hanford (KHNX) WSR-88D cross section of radar at 21:25Z on October 5, 2010 showing a thunderstorm over southeast Bishop.

El Niño and La Niña and Their Impact on the Weather In Bishop

Introduction

El Niño and La Niña episodes have been shown in numerous studies to have large scale and regional impacts on weather patterns and seasonal climate averages. This study presents the observed values of various weather parameters in Bishop in order to see what, if any, correlations there are due to El Niño and La Niña episodes on a more local scale.

Methodology

Oceanic Niño Index (ONI) values, defined as sea surface temperature anomalies in the Niño 3.4 region (located at 5°N to 5°S and 120° to 170°W) of the eastern and central equatorial Pacific Ocean based on centered 30-year base periods updated every 5 years, were obtained from the Climate Prediction Center (CPC) for each year since 1950 to the present. These values were analyzed for departures of 0.5°C warmer than normal for at least five consecutive overlapping three month seasons which indicated an El Niño episode and departures of 0.5°C cooler than normal for at least five consecutive overlapping three month seasons which inferred a La Niña episode for the purposes of this report. It should be noted that this criteria is also what CPC uses to define El Niño and La Niña episodes. Episodes were then defined from a July-June period for simplistic purposes for the compilation of this report.

The next step was to rate El Niño and La Niña episodes into three categories – strong, moderate and weak based on ONI values. At least three consecutive three month periods with a given value were used to rate episodes. The thresholds for rating ONI values were obtained from correspondence with CPC in a previous study on El Niño and La Niña episodes done by the author.

For El Niño episodes events were defined as:

Weak – ONI values from +0.5°C to +0.9°C

Moderate – ONI values from +1.0°C to +1.8°C

High – ONI values greater than +1.8°C

For La Niña episodes events were defined as:

Weak – ONI values from -0.5°C to -0.9°C

Moderate – ONI values from -1.0°C to -1.8°C

High – ONI values greater than -1.8°C

Data was analyzed to determine if there were any observable effects on precipitation, snowfall and temperature. For precipitation, the ‘cold season’ period of November-April (as well as December-February for precipitation) was also looked at

in order to analyze precipitation totals without any impacts from the monsoon. The December through February period was analyzed since these three months compose meteorological winter and this period often features synoptic scale storm systems that affect the Owens Valley and eastern Sierra Nevada.

Precipitation and Snowfall

The table below lists precipitation totals for the July-June period for years with an El Niño episode. In order to compute normals, totals for the 1981-2010 period were ranked from greatest to least and then split into thirds. Those values were then used to denote above normal (upper third), near normal (middle third) and below normal (bottom third). The cut-offs for these thresholds were then used as the thirty year normal for defining above normal, near normal and below normal precipitation. These cut-offs were then applied to any season that met El Niño criteria and the totals for a given season were then rated above normal (shown in green for precipitation and blue for snow), near normal (shown in black) and below normal (shown in brown for precipitation and purple for snow).

Episode	Strength of Episode	Bishop July-June Precipitation Total	Bishop July-June Seasonal Snowfall Total	Bishop November-April Precipitation Total
1951-1952	Moderate	13.52"	32.5"	13.17"
1952-1953	Weak	3.70"	1.0"	2.21"
1953-1954	Weak	5.94"	T	5.40"
1957-1958	Moderate	7.89"	2.2"	6.03"
1963-1964	Moderate	3.07"	7.9"	1.19"
1965-1966	Moderate	5.47"	T	4.07"
1968-1969	Moderate	18.02"	59.3"	16.22"
1969-1970	Moderate	2.51"	4.1"	2.10"
1972-1973	Strong	7.24"	7.0"	5.62"
1976-1977	Weak	4.69"	3.0"	1.05"
1977-1978	Weak	10.98"	6.4"	10.45"
1982-1983	Strong	10.00"	10.4"	8.07"
1986-1987	Moderate	2.10"	1.4"	0.91"
1987-1988	Moderate	4.84"	14.5"	4.14"
1991-1992	Moderate	4.20"	M	2.94"
1994-1995	Moderate	8.56"	14.0"	6.12"
1997-1998	Strong	9.92"	9.4"	7.57"
2002-2003	Moderate	3.88"	0.2"	3.82"
2004-2005	Weak	10.31"	36.3"	8.77"
2006-2007	Weak	1.51"	1.1"	0.72"
2009-2010	Moderate	5.46"	6.0"	3.45"
30 Year Normal	N/A	5.18"	6.8"	4.01"
Average for Moderate and Strong Events	N/A	7.11"	12.1"	5.69"

Overall there appears to be a good correlation for near to above normal precipitation during El Niño episodes at Bishop, with an excellent correlation during strong episodes. Snowfall, however, appears highly variable in weak to moderate events and no correlation can be made for these. Strong events appear to produce near to slightly above normal snowfall. It should be noted the snowiest winter on record in Bishop, including the largest snowstorm ever recorded here, took place during the winter of 1968-1969 which was an El Niño episode.

The table below lists precipitation totals for the July-June period for years with a La Niña episode. In order to compute normals, totals for the 1981-2010 period were ranked from greatest to least and then split into thirds. Those values were then used to denote above normal (upper third), near normal (middle third) and below normal (bottom third). The cut-offs for these thresholds were then used as the thirty year normal for defining above normal, near normal and below normal precipitation. These cut-offs were then applied to any season that met La Niña criteria and the totals for a given season were then rated above normal (shown in green for precipitation and blue for snow), near normal (shown in black) and below normal (shown in brown for precipitation and purple for snow).

Episode	Strength of Episode	Bishop July-June Precipitation Total	Bishop July-June Seasonal Snowfall Total	Bishop November-April Precipitation Total
1949-1950	Moderate	3.35"	1.7"	3.25"
1950-1951	Weak	4.69"	2.9"	3.29"
1954-1955	Weak	5.39"	21.5"	4.21"
1955-1956	Moderate	8.56"	12.8"	7.82"
1956-1957	Weak	3.69"	T	2.71"
1964-1965	Weak	2.16"	6.0"	1.50"
1970-1971	Moderate	3.39"	2.5"	2.31"
1971-1972	Weak	2.54"	1.8"	1.89"
1973-1974	Strong	6.32"	16.4"	5.98"
1974-1975	Weak	2.76"	T	1.73"
1975-1976	Moderate	3.62"	21.5"	1.49"
1983-1984	Weak	4.13"	1.0"	2.92"
1984-1985	Moderate	5.59"	9.9"	3.14"
1988-1989	Strong	2.60"	M	1.02"
1995-1996	Weak	3.09"	M	2.83"
1998-1999	Moderate	2.56"	12.1"	1.97"
1999-2000	Moderate	2.42"	T	2.04"
2000-2001	Weak	3.66"	13.1"	2.97"
2007-2008	Moderate	7.45"	M	6.46"
2010-2011	Moderate	9.13"	2.5"	7.65"
2011-2012	Weak	3.12"	4.9"	2.14"
30 Year Normal	N/A	5.18"	6.8"	4.01"
Average for Moderate and Strong Events	N/A	4.99"	9.9"	3.92"

Overall there appears to be a weak correlation for near to below normal precipitation during La Niña episodes at Bishop. Snowfall, however, appears to be near to above normal.

Temperature

The table below lists the average temperature for meteorological winter (December through February) for years with an El Niño episode. In order to compute normals, average temperatures for the 1981-2010 period were ranked from greatest to least and then split into thirds. Those values were then used to denote above normal (upper third), near normal (middle third) and below normal (bottom third). The cut-offs for these thresholds were then used as the thirty year normal for defining above normal, near normal and below normal temperatures. These cut-offs were then applied to any season that met El Niño criteria and the totals for a given season were then rated above normal (shown in orange), near normal (shown in black) and below normal (shown in blue).

Episode	Strength of Episode	Bishop Average Temperature
1951-1952	Moderate	35.5
1952-1953	Weak	40.8
1953-1954	Weak	41.1
1957-1958	Moderate	41.7
1963-1964	Moderate	39.7
1965-1966	Moderate	36.9
1968-1969	Moderate	34.2
1969-1970	Weak	40.8
1972-1973	Strong	35.7
1976-1977	Weak	41.1
1977-1978	Weak	41.2
1982-1983	Strong	40.0
1986-1987	Moderate	38.6
1987-1988	Moderate	38.0
1991-1992	Moderate	40.0
1994-1995	Moderate	40.9
1997-1998	Strong	37.6
2002-2003	Moderate	40.7
2004-2005	Weak	40.2
2006-2007	Weak	39.2
2009-2010	Moderate	37.6
30 Year Normal	N/A	39.5
Average for Moderate and Strong Events	N/A	38.4

Overall there appears to be no correlation between El Niño episodes and the average temperature for meteorological winter at Bishop.

The table below lists the average temperature for meteorological winter (December through February) for years with a La Niña episode. In order to compute normals, average temperatures for the 1981-2010 period were ranked from greatest to least and then split into thirds. Those values were then used to denote above normal (upper third), near normal (middle third) and below normal (bottom third). The cut-offs for these thresholds were then used as the thirty year normal for defining above normal, near normal and below normal temperatures. These cut-offs were then applied to any season that met La Niña criteria and the totals for a given season were then rated above normal (shown in orange), near normal (shown in black) and below normal (shown in blue).

Episode	Strength of Episode	Bishop Average Temperature
1949-1950	Moderate	38.5
1950-1951	Weak	42.0
1954-1955	Weak	34.1
1955-1956	Moderate	38.6
1956-1957	Weak	39.7
1964-1965	Weak	41.5
1970-1971	Moderate	40.0
1971-1972	Weak	38.7
1973-1974	Strong	37.3
1974-1975	Weak	39.2
1975-1976	Moderate	40.8
1983-1984	Weak	42.0
1984-1985	Moderate	37.3
1988-1989	Strong	36.3
1995-1996	Weak	41.2
1998-1999	Moderate	39.7
1999-2000	Moderate	40.8
2000-2001	Weak	37.8
2007-2008	Moderate	37.3
2010-2011	Moderate	40.8
2011-2012	Weak	39.0
30 Year Normal	N/A	39.0
Average for Moderate and Strong Events	N/A	38.9

While strong La Niña episodes appear to correlate to near or below normal temperatures for meteorological winter at Bishop, there appears to be no direct correlation for weak to moderate events.

Low Temperatures of 10 Degrees or Below

The table below lists the number of days with minimum temperatures of 10°F or below (above average years shown in blue) with an El Niño episode (July-June period).

Episode	Strength of Episode	Number of Days With Minimum Temperatures of 10 °F or Below At Bishop
1951-1952	Moderate	9
1952-1953	Weak	1
1953-1954	Weak	3
1957-1958	Moderate	0
1963-1964	Moderate	3
1965-1966	Moderate	0
1968-1969	Moderate	16
1969-1970	Moderate	5
1972-1973	Strong	7
1976-1977	Weak	0
1977-1978	Weak	0
1982-1983	Strong	0
1986-1987	Moderate	1
1987-1988	Moderate	4
1991-1992	Moderate	0
1994-1995	Moderate	4
1997-1998	Strong	3
2002-2003	Moderate	0
2004-2005	Weak	1
2006-2007	Weak	6
2009-2010	Moderate	3
30 Year Normal	N/A	3.4
Average for Moderate and Strong Events	N/A	3.6

There appears to be no correlation between El Niño episodes and the frequency of low temperatures at or below 10 degrees at Bishop.

The table below lists the number of days with minimum temperatures of 10°F or below (above average years shown in blue) with a La Niña episode (July-June period).

Episode	Strength of Episode	Number of Days With Minimum Temperatures of 10 °F or Below At Bishop
1949-1950	Moderate	10
1950-1951	Weak	0
1954-1955	Weak	17
1955-1956	Moderate	2
1956-1957	Weak	2
1964-1965	Weak	5
1970-1971	Moderate	2
1971-1972	Weak	6
1973-1974	Strong	6
1974-1975	Weak	5
1975-1976	Moderate	1
1983-1984	Weak	0
1984-1985	Moderate	10
1988-1989	Strong	13
1995-1996	Weak	0
1998-1999	Moderate	5
1999-2000	Moderate	0
2000-2001	Weak	4
2007-2008	Moderate	2
2010-2011	Moderate	0
2011-2012	Weak	5
30 Year Normal	N/A	3.4
Average for Moderate and Strong Events	N/A	4.6

Overall there appears to be a good correlation between La Niña episodes and an above normal frequency of low temperatures at or below 10 degrees at Bishop.

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References

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